

Sensor Products

Application Guide

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Example Illustrations

Illustrations used in this guide for example sensor installations may contain components that are customer supplied and not included with the sensor. Please check with your Veeder-Root Distributor for recommended installation accessories.

Third Party Evaluations

Third party evaluations of the Veeder-Root sensors contained in this application guide can be found under the Veeder-Root vendor name on the National Work Group on Leak Detection Evaluations (NWGLDE) website:

<http://www.nwglde.org>

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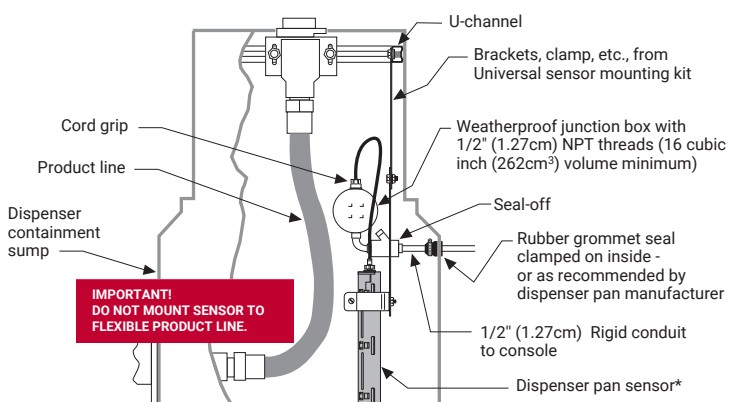
			Where Used							Category						Fuel Compatibility													
Sensor Description	Part #	Page #	Dispenser Pan	Spill Containment	STP Sump	Convault Tank	Annular Space	Monitoring Well	Oil/Water Separator Tank	Discriminating	Non-Discriminating	Position Sensitive	Level Sensing	Static Testing	Hydrostatic	100% Gasoline	Diesel	Kerosene	Jet Fuel	Aviation Gas	E-15	E-85	E-100	Bio-Diesel 20	Bio-Diesel 100	Renewable (Green) Diesel	Diesel Exhaust Fuel (DEF)	Waste Oil	Motor Oil
Discr. Dispenser Pan	794380-322	1	X	X						X						X	X	X	X	X	X	X ¹		X		X		X	X
Discriminating Containment Sump	794380-352	2		X	X					X						X	X	X	X	X	X	X ¹		X		X		X	X
Solid-State (Optical) Discr. Dispenser Pan	794380-320	3	X	X						X						X	X	X	X	X	X	X ¹		X	X			X	X
Solid-State (Optical) Discr. Containment Sump	794380-350	4		X	X					X						X	X	X	X	X	X	X ¹		X		X		X	X
Mag. Discr. Level Indicating Containment Sump	857080-XXX	5	X	X	X					X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Solid-State Non-Discriminating Dispenser Pan	794380-321	6	X	X							X					X	X	X	X	X	X	X ¹		X	X	X		X	X
Solid-State Non-Discriminating Containment Sump	794380-351	7		X	X						X					X	X	X	X	X	X	X ¹		X	X	X		X	X
Piping Sump-12' (3.66m) Cable	794380-208	8	X	X	X						X					X	X	X	X	X	X			X		X		X	X
Non-Discriminating Standalone Dispenser Pan	847990-001	9	X	X	X						X					X	X	X	X	X	X			X		X		X	X
Position Sensitive	794380-323	10	X	X	X						X	X				X	X	X	X	X	X	X	X	X		X		X	X
Solid-State Discr. Interstitial for Fiberglass Tanks	794380-343	11					X			X						X	X	X	X	X	X			X	X	X	X	X	X
Interstitial for Double-Wall Fiberglass Tanks	794390-409	12					X				X					X	X	X	X	X	X			X		X			
Solid-State Interstitial for Fiberglass Tanks, High Alcohol	794380-345	13					X				X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
Interstitial for Steel Tanks	794390-4X0	14			X		X				X					X	X	X	X	X	X			X		X		X	X
Interstitial for Steel Tanks, Position Sensitive ²	794380-333	15		X			X				X	X				X	X	X	X	X	X	X	X	X	X	X		X	X
Interstitial for Steel Tanks, High Alcohol	794380-430	16					X				X					X	X	X	X	X	X	X	X	X	X	X		X	X
MicroSensor	794380-344	17		X			X				X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
(Dual-Point) Hydrostatic Reservoir	794380-303	18					X								X	X	X	X	X	X	X	X ¹	X ¹	X		X		X	X
Single-Point Hydrostatic	794380-301	19					X								X	X	X	X	X	X	X	X ¹	X ¹	X		X			
Single-Point Mini-Hydrostatic Reservoir (High Alcohol)	794380-304	20					X								X	X	X	X	X	X	X	X	X	X	X	X		X	X
Monitoring Well Vapor	794390-700	21						X								X			X	X	X								
Groundwater	794380-62X	22						X								X	X	X	X	X	X			X		X		X	X
Oil Water Separator	794690-XXX	23							X							X	X	X	X	X	X			X				X	X

¹ Single use only if sensor was exposed to E85 or E100

(Test per Sensor Operability Guide [P/N 577013-814] in E-10 or less)

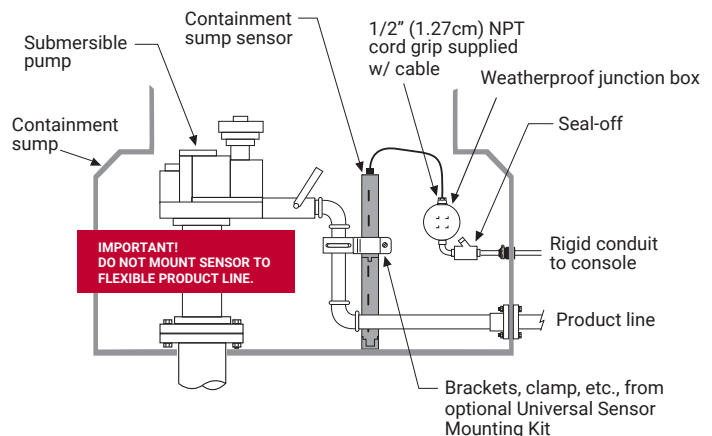
NOTE: P/Ns with X included represent multiple part numbers.

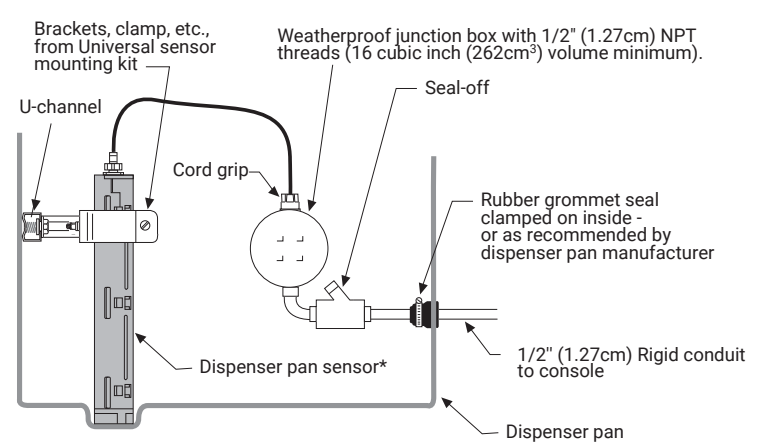
² Small containment areas (i.e. spill buckets)

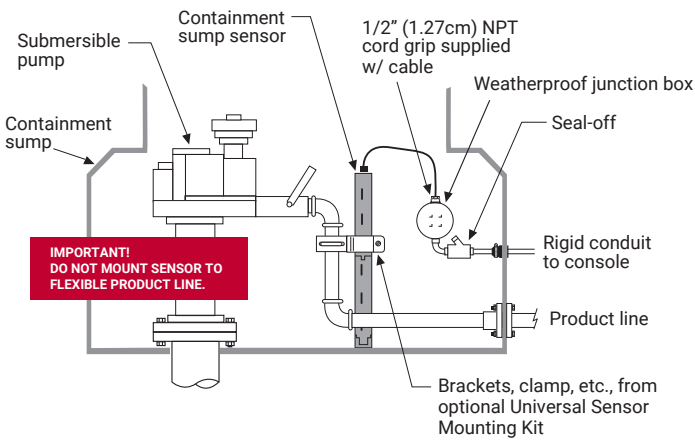
Sensor Description	Discriminating Dispenser Pan Sensor	This type of discriminating sensor is installed in a dispenser pan and will detect the presence of, and differentiate between, hydrocarbons and other liquids.				
Part Number	794380-322					
Category	☒ Discriminating ☐ Non-Discriminating ☐ Position Sensitive			☐ Level Sensing ☐ Static Testing ☐ Hydrostatic		
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas			☒ E-15 ☒ E-85 ¹ ☐ E-100 ☒ Bio-Diesel 20 ☐ Bio-Diesel 100		
				☒ Green Diesel ☐ DEF ☒ Waste Oil ☒ Motor Oil		
1 Single use only (Test per Sensor Operability Guide in E-10 or less)						
Console Compatibility (International Only ²)	Recommended Min. Console Software	Sensor Interface Modules				
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
TLS-450	4A or Higher					
TLS4 (8601 Series) ²	6A or Higher	330020-750	Universal Sensor Input/ Out-put Module (USIOM-AC)	1	12	Included
TLS4i (8601 Series)		330020-751			6	
TLS4B (8601 Series) ²						
TLS4c (8601 Series)						
TLS-350/R/PLUS	124/324 or Higher	329358-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately
TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module	1	4	Sold Separately
TLS-300i		330230-001	4 Probe / 8 Sensor Interface Module		8	Included
TLS-300C		330513-001	2 Probe / 8 Sensor Options			
Alarm Notification	Normal	Sensor in Normal State - No liquid detected				
	Low Liquid	Liquid detected at a minimum of 1.37" (3.48cm)				
	High Liquid	Liquid detected at a minimum of 7.66" (19.45cm)				
	Fuel Alarm	Permeable material saturated with Fuel				
	Sensor Out	Sensor not communicating to ATG/Console				
Installation Kit	330020-012	Universal Sensor Mounting Kit (Sold separately)				
Specifications			Example Installation			
Operating Principle	Product Permeable, Reed Switch/Float					
Product Activation Height	Gas - 0.125" (3.175mm); Water - Low 1.37" (3.48cm), High 7.66" (19.45cm)					
Operating Temperature	+32 to +140°F (0 to +60°C)					
Dimensions	11.6" (29.4cm) high, 2.2" (5.6cm) dia.					
Miscellaneous/Notes	Standard Cable Length: 12ft (3.66m)					
Third Party Evaluation Links	TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles					
Product Link	Discriminating Dispenser Pan Sensor					
Warranty with System	1 Yr Parts & Labor					
Warranty (When purchased separately)	1 Yr Parts Only					
Where Used (Typical)	☒ Dispenser Pan ☒ Spill Containment ☐ STP Sump ☐ Convault Tank					
	☐ Annular Space ☐ Monitoring Well ☐ Oil/Water Separator Tank					
*Dispenser pan sensor should: 1. Rest in the cup or the lowest point of the dispenser containment sump. 2. Be positioned so as to be removable by pulling the sensor straight up out of the pan. 3. Be mounted in a true vertical position.						

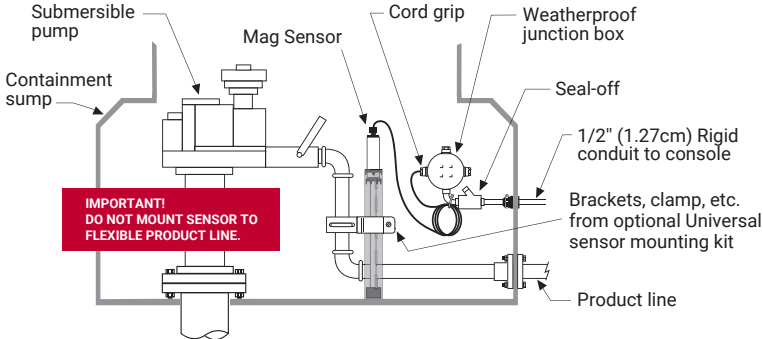
- *Dispenser pan sensor should:
1. Rest in the cup or the lowest point of the dispenser containment sump.
 2. Be positioned so as to be removable by pulling the sensor straight up out of the pan.
 3. Be mounted in a true vertical position.

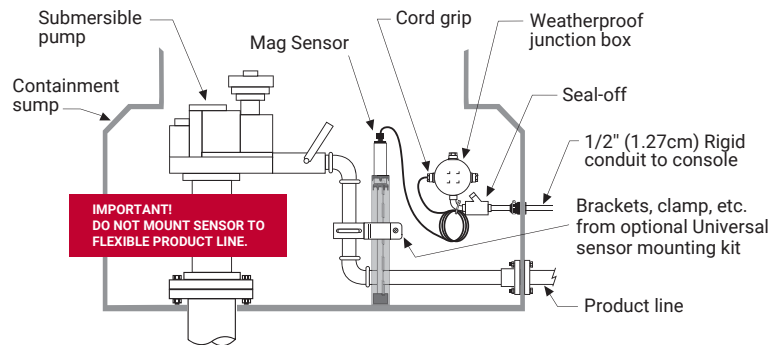
Sensor Description	Discriminating Containment Sump Sensor	This type of discriminating sensor is installed in a containment sump area. It detects the presence of, and differentiates between, hydrocarbons and other liquids.						
Part Number	794380-352							
Category	☒ Discriminating				☐ Level Sensing			
	☐ Non-Discriminating				☐ Static Testing			
	☐ Position Sensitive				☐ Hydrostatic			
Fuel Compatibility	☒ Gas				☒ E-15			
	☒ Diesel				☒ E-85 ¹			
	☒ Kerosene				☐ E-100			
	☒ Jet Fuel				☒ Bio-Diesel 20			
	☒ Aviation Gas				☐ Bio-Diesel 100			
¹ Single use only (Test per Sensor Operability Guide in E-10 or less)								
Console Compatibility (International Only ²)	Recommended Min. Console Software	Sensor Interface Modules						
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability		
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately		
TLS-450	4A or Higher							
TLS4 (8601 Series) ²	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included		
TLS4i (8601 Series)								
TLS4B (8601 Series) ²		330020-751			6			
TLS4c (8601 Series)								
TLS-350/R/PLUS	124/324 or Higher	329358-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately		
TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module	1	4	Sold Separately		
TLS-300i		330230-001	4 Probe / 8 Sensor Interface Module		8	Included		
TLS-300C		330513-001	2 Probe / 8 Sensor Options					
Alarm Notification	Normal	Sensor in Normal State - No liquid detected		Where Used (Typical) ☐ Dispenser Pan			☐ Annular Space	
	Low Liquid	Liquid detected at a minimum of 1.35" (3.4cm)					☒ Spill Containment	☐ Monitoring Well
	High Liquid	Liquid detected at a minimum of 12.28" (31.19cm)					☒ STP Sump	☐ Oil/Water Separator Tank
	Fuel Alarm	Permeable material saturated with Fuel					☐ Convault Tank	
	Sensor Out	Sensor not communicating to ATG/Console						
Installation Kit	330020-012	Universal Sensor Mounting Kit (Sold separately)						
Specifications			Example Installation					
Operating Principle	product permeable, reed switch/float							
Product Activation Height	Gas - 0.125" (3.175mm); Water - Low 1.35" (3.4cm), High 12.28" (31.19cm)							
Operating Temperature	+32 to +140°F (0 to +60°C)							
Dimensions	22.1" (56.1cm) high, 2.2" (5.6cm) dia.							
Miscellaneous/Notes	Standard Cable Length: 12 ft (3.66m)							
Third Party Evaluation Links	TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles							
Product Link	Discriminating Containment Sump Sensor							
Warranty with System	1 Yr Parts & Labor							
Warranty (When purchased separately)	1 Yr Parts Only							

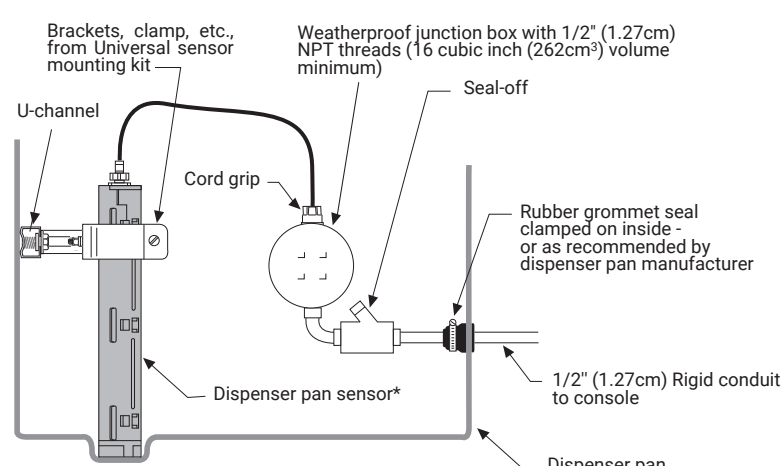


Sensor Description	Solid-State (Optical) - Discriminating Dispenser Pan Sensor		This type of discriminating sensor is installed in a dispenser containment sump area. It detects the presence of, and differentiates between, hydrocarbons and other liquids.			
Part Number	794380-320					
Category	☒ Discriminating ☐ Non-Discriminating ☐ Position Sensitive			☐ Level Sensing ☐ Static Testing ☐ Hydrostatic		
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas			☒ E-15 ☒ E-85 ¹ ☐ E-100 ☒ Bio-Diesel 20 ☐ Bio-Diesel 100		
			☒ Green Diesel ☐ DEF ☒ Waste Oil ☒ Motor Oil			
¹ Single Use Only (Test per Sensor Operability Guide in E-10 or less)						
Console Compatibility (*International Only ²)	Recommended Min. Console Software	Sensor Interface Modules				
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	8	Sold Separately
TLS-450	4A or Higher					
TLS4 (8601 Series) ²	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	6	Included
TLS4i (8601 Series)						
TLS4B (8601 Series) ²		330020-751			4	
TLS4c (8601 Series)						
TLS-350/R/PLUS	124/324 or Higher	329950-001	Type B Interface Module	Up to 8	6	Sold Separately
TLS-300i	N/A					
TLS-300C						
Alarm Notification	Normal	Sensor in Normal State - No liquid detected				
	Low Liquid	Liquid detected at a minimum of 1.37" (3.4cm)				
	High Liquid	Liquid detected at a minimum of 7.66" (19.45cm)				
	Fuel Alarm	Permeable material saturated with fuel				
	Sensor Out	Sensor not communicating to ATG/Console				
Installation Kit	330020-012	Universal Sensor Mounting Kit (sold separately)				
Specifications			Example Installation			
Operating Principle	Electrical conductivity/optical					
Product Activation Height	Gas - 0.125" (3.175mm); Water - Low 1.37" (3.4cm), High 7.66" (19.45cm)					
Operating Temperature	-40 to +122°F (-40 to +50°C)					
Dimensions	11.6" (29.4cm) high, 2.2" (5.6cm) dia.					
Miscellaneous/Notes	Standard Cable Length: 12ft (3.66m)					
Third Party Evaluation Links	TLS-350/TLS-450 Series Consoles TLS4 (8601 Series) Consoles					
Product Link	Solid-State Discriminating Dispenser Pan Sensor					
Warranty with System	1 Yr Parts & Labor					
Warranty (When purchased separately)	1 Yr Parts Only					
Where Used (Typical)						
☒ Dispenser Pan ☒ Spill Containment ☐ STP Sump ☐ Convault Tank ☐ Annular Space ☐ Monitoring Well ☐ Oil/Water Separator Tank						
*Dispenser pan sensor should: 1. Rest in the cup or the lowest point of the dispenser pan. 2. Be positioned so as to be removable by pulling the sensor straight up out of the pan. 3. Be mounted in a true vertical position.						

Sensor Description	Solid-State (Optical)-Discriminating Containment Sump Sensor		This type of discriminating sensor is installed in a containment sump and will detect the presence of, and differentiate between, hydrocarbons and other liquids.					
Part Number	794380-350							
Category	☒ Discriminating ☐ Non-Discriminating ☐ Position Sensitive		☐ Level Sensing ☐ Static Testing ☐ Hydrostatic					
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas		☒ E-15 ☒ E-85¹ ☐ E-100 ☒ Bio-Diesel 20 ☐ Bio-Diesel 100					
¹Single use only (Test per Sensor Operability Guide in E-10 or less)								
Console Compatibility (*International Only²)	Recommended Min. Console Software	Sensor Interface Modules						
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability		
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	8	Sold Separately		
TLS-450	4A or Higher							
TLS4 (8601 Series)²	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	6	Included		
TLS4i (8601 Series)								
TLS4B (8601 Series)²		330020-751			4			
TLS4c (8601 Series)								
TLS-350/R/PLUS	124/324 or Higher	329950-001	Type B Interface Module	Up to 8	6	Sold Separately		
TLS-300i	N/A							
TLS-300C								
Alarm Notification	Normal	Sensor in Normal State - No liquid detected						
	Low Liquid	Liquid detected at a minimum of 1.37" (3.48cm)						
	High Liquid	Liquid detected at a minimum of 10.3" (26.2cm)						
	Fuel Alarm	Permeable material saturated with Fuel						
	Sensor Out	Sensor not communicating to ATG/Console						
Installation Kit	330020-012	Universal Sensor Mounting Kit (Sold separately)						
Specifications			Example Installation					
Operating Principle	Electrical conductivity/optical							
Product Activation Height	Gas - 0.125" (3.175mm); Water - Low - 1.37" (3.4cm), High - 10.3" (26.2cm)							
Operating Temperature	-40 to +122°F (-40 to +50°C)							
Dimensions	22.1" (56.1cm) high, 2.2" (5.6cm) dia.							
Miscellaneous/Notes	Standard Cable Length: 12ft (3.66m)							
Third Party Evaluation Links	TLS-350/TLS-450 Series Consoles TLS4 (8601 Series) Consoles							
Product Link	Solid-State Discriminating Containment Sump Sensor							
Warranty with System	1 Yr Parts & Labor							
Warranty (When purchased separately)	1 Yr Parts Only							
Where Used (Typical)								
☐ Dispenser Pan ☒ Spill Containment ☒ STP Sump ☐ Convault Tank		☐ Annular Space ☐ Monitoring Well ☐ Oil/Water Separator Tank						

Sensor Description	Magnetostrictive Discriminating Level Indicating Containment Sump Sensor		This type of sensor is installed in a dispenser pan or containment sump and will detect the presence of, and differentiate between, fuel and other liquids.			
Part Number	857080-111 (12"/30.48cm), -112 (24"/60.96cm) / 857080-211 (12"/30.48cm), -212 (24"/60.96cm). The -211 and -212 sensors are capable of performing a Sump Integrity Test.					
Category	☒ Discriminating ☐ Non-Discriminating ☒ Position Sensitive			☒ Level Sensing ☒ Static Testing ☐ Hydrostatic		
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas			☒ E-15 ☒ E-85 ☒ E-100 ☒ Bio-Diesel 20 ☒ Bio-Diesel 100		
						
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules				
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
TLS-450	4A or Higher					
TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input/ Out-put Module (USIOM-AC)	1	12	Included
TLS4i (8601 Series)						
TLS4B (8601 Series) ¹		330020-751			6	
TLS4c (8601 Series)						
TLS-350/R/PLUS	124/324 or Higher (-211 and -212 sensors require 126/326 or higher)	329356-004	Smart Sensor Interface Module	Up to 8	8	Sold Separately
TLS-300i	N/A					
TLS-300C						
Alarm Notification	Normal	Sensor in Normal State - No liquid detected		Where Used (Typical) ☒ Dispenser Pan ☒ Spill Containment ☒ STP Sump ☐ Convault Tank ☐ Annular Space ☐ Monitoring Well ☐ Oil/Water Separator Tank		
	Water Alarm	Water detected at a minimum of 1.614" (2.83cm)				
	Fuel Alarm	Fuel detected 1.368" (3.47cm)				
	Sensor Comm. Alarm	Sensor not communicating to ATG/Console				
Installation Kit	330020-012	Universal Sensor Mounting Kit (Sold separately)				
Specifications			Example Installation			
Operating Principle	Magnetostrictive probe with dual floats					
Product Activation Height	Water 1.614" (4.1cm), Fuel 1.368" (3.47cm)					
Operating Temperature	-40°F to +140°F (-40°C to +60°C)					
Dimensions	2.4" (6.1cm) Diameter; 21.4" (54.4cm) Long (-111 and -211 models), 33.4" (84.8cm) Long (-112 and -212 models)					
Miscellaneous/Notes	Standard Cable Length: 10ft (3.66m)					
Third Party Evaluation Links	TLS-350/TLS-450 Series Consoles TLS4 (8601 Series) Consoles					
Product Link	Mag Sump Sensor					
Warranty with System	1 Yr Parts & Labor					
Warranty (When purchased separately)	1 Yr Parts Only					



Sensor Description	Solid-State - Non-Discriminating Dispenser Pan Sensor		This Solid-State, Non-Discriminating Sensor is installed typically in a dispenser pan location to detect the presence of a liquid. Its optical liquid level technology requires no moving parts, allowing it to operate in sub-zero temperatures.					
Part Number	794380-321							
Category	☐ Discriminating ☒ Non-Discriminating ☐ Position Sensitive		☐ Level Sensing ☐ Static Testing ☐ Hydrostatic					
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas		☒ E-15 ☒ E-85 ¹ ☐ E-100 ☒ Bio-Diesel 20 ☒ Bio-Diesel 100				☒ Green Diesel ☐ DEF ☒ Waste Oil ☒ Motor Oil	
¹ Single use only (Test per Sensor Operability Guide in E-10 or less)								
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules						
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability		
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately		
TLS-450	4A or Higher							
TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included		
TLS4i (8601 Series)		330020-751			6			
TLS4B (8601 Series) ¹								
TLS4c (8601 Series)								
TLS-350/R/PLUS	124/324 or Higher	329956-001	Type A Sensor Interface Module	Up to 8	8	Sold Separately		
TLS-350J	N/A							
TLS-300i								
TLS-300C								
Alarm Notification	Normal	Sensor in Normal State - No liquid detected						
	Fuel Alarm	Liquid detected - Approx. 1.0" (2.54cm)						
	Sensor Out	Sensor not communicating to ATG/Console						
Installation Kit	330020-012	Universal Sensor Mounting Kit (sold separately)						
Specifications			Example Installation					
Operating Principle	Optical - Looking at phase changes in the light beams by causing them to interact or interfere with one another							
Product Activation Height	Fuel or Water - Approx. 1" (2.54cm)							
Operating Temperature	-40 to +122°F (-40 to +50°C)							
Dimensions	11.6" (29.4cm) high, 2.2" (5.6cm) dia.							
Miscellaneous/Notes	Standard Cable Length: 12ft (3.66m)							
Third Party Evaluation Links	TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles							
Product Link	Solid-State - Non-Discriminating Dispenser Pan Sensor							
Warranty with System	1 Yr Parts & Labor							
Warranty (When purchased separately)	1 Yr Parts Only							
Where Used (Typical)	☐ Convault Tank ☐ Annular Space ☐ Monitoring Well ☐ Oil/Water Separator Tank							
	☒ Dispenser Pan ☒ Spill Containment ☐ STP Sump							

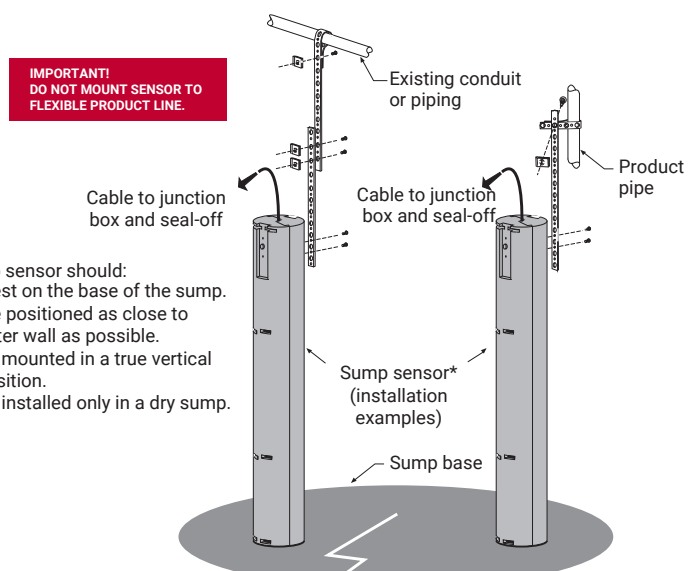
*Dispenser pan sensor should:

1. Rest in the cup or the lowest point of the dispenser pan.
2. Be positioned so as to be removable by pulling the sensor straight up out of the pan.
3. Be mounted in a true vertical position.

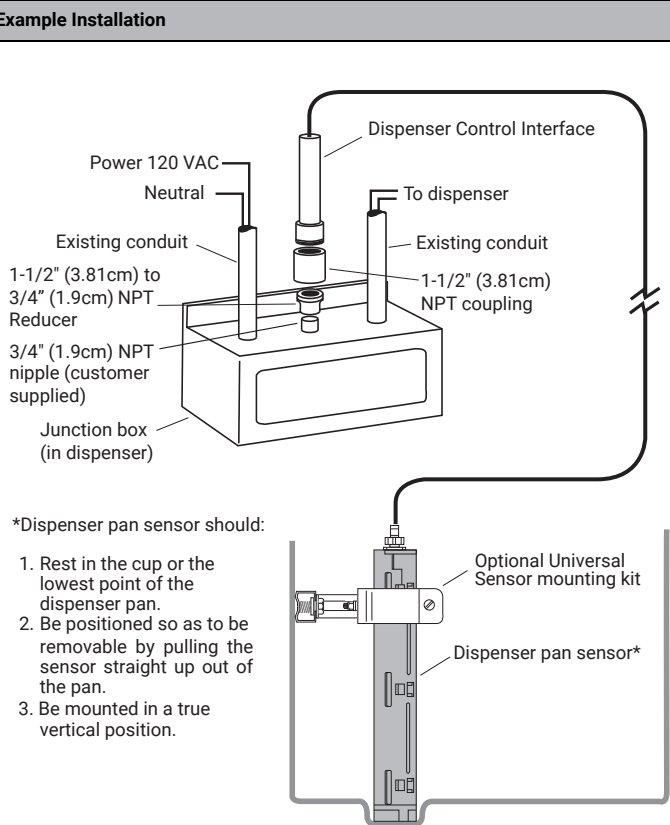
*Dispenser pan sensor should:

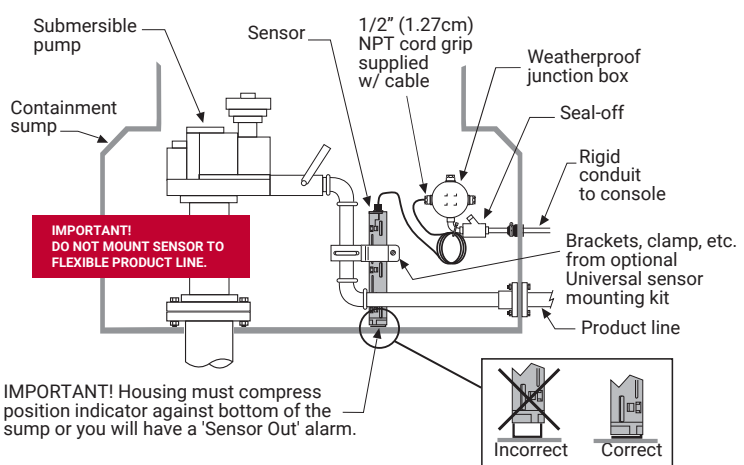
1. Rest in the cup or the lowest point of the dispenser pan.
2. Be positioned so as to be removable by pulling the sensor straight up out of the pan.
3. Be mounted in a true vertical position.

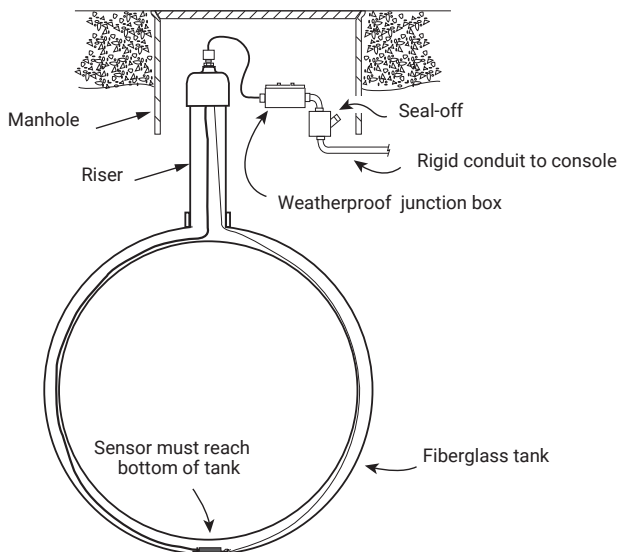
Sensor Description	Solid-State - Non-Discriminating Containment Sump Sensor		This Solid-State, Non-Discriminating Sensor is installed typically in a containment sump area to detect the presence of a liquid. Its optical liquid level technology requires no moving parts, allowing it to operate in sub-zero temperatures.				
Part Number	794380-351						
Category	☐ Discriminating ☒ Non-Discriminating ☐ Position Sensitive			☐ Level Sensing ☐ Static Testing ☐ Hydrostatic			
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas			☒ E-15 ☒ E-85 ¹ ☐ E-100 ☒ Bio-Diesel 20 ☒ Bio-Diesel 100			
				☒ Green Diesel ☐ DEF ☒ Waste Oil ☒ Motor Oil			
				¹ Single use only (Test per Sensor Operability Guide in E-10 or less)			
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules					
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability	
	TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	
	TLS-450	4A or Higher					
	TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	
	TLS4i (8601 Series)						
	TLS4B (8601 Series) ¹		330020-751				6
	TLS4c (8601 Series)						
	TLS-350/R/PLUS	124/324 or Higher	329956-001	Type A Sensor Interface Module	Up to 8	8	Sold Separately
	TLS-350J	N/A					
	TLS-300i						
	TLS-300C						
Alarm Notification	Normal	Sensor in Normal State - No liquid detected					
	Fuel Alarm	Liquid detected - Approx. 1.0" (2.54cm)					
	Sensor Out	Sensor not communicating to ATG/Console					
Installation Kit	330020-012	Universal Sensor Mounting Kit (Sold separately)					
Specifications			Example Installation				
Operating Principle	Optical - Looking at phase changes in the light beams by causing them to interact or interfere with one another						
Product Activation Height	Fuel or Water - Approx. 1" (2.54cm)						
Operating Temperature	-40 to +122°F (-40 to +50°C)						
Dimensions	22.1" (56.1cm) high, 2.2" (5.6cm) dia.						
Miscellaneous/Notes	Standard Cable Length: 12ft (3.66m)						
Third Party Evaluation Links	TLS-350/TLS-450 Series Consoles TLS4 (8601 Series) Consoles						
Product Link	Solid-State Non-Discriminating Containment Sump Sensor						
Warranty with System	1 Yr Parts & Labor						
Warranty (When purchased separately)	1 Yr Parts Only						
Where Used (Typical)	☐ Convault Tank ☐ Annular Space ☐ Monitoring Well ☐ Oil/Water Separator Tank						
☐ Dispenser Pan ☒ Spill Containment ☒ STP Sump							

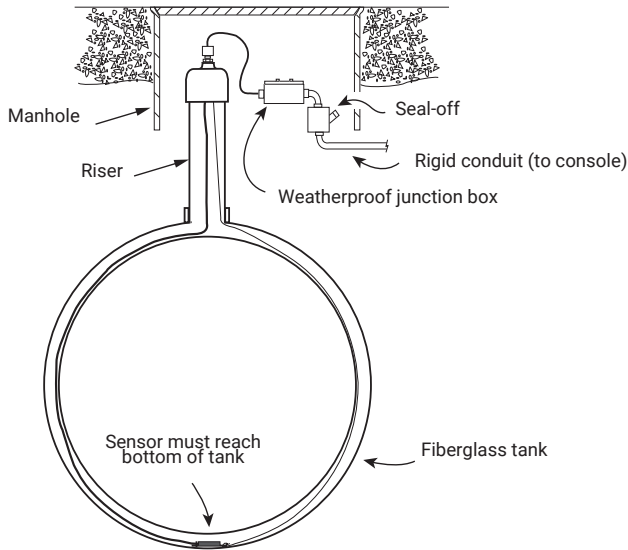
Sensor Description	Piping Sump Sensor	The Piping Sump Sensor is installed in a tank piping sump (STP Containment Sump) and will detect the presence of a liquid.				
Part Number	794380-208					
Category	☐ Discriminating ☒ Non-Discriminating ☐ Position Sensitive			☐ Level Sensing ☐ Static Testing ☐ Hydrostatic		
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas			☒ E-15 ☐ E-85 ☐ E-100 ☒ Bio-Diesel 20 ☐ Bio-Diesel 100		
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules				
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
TLS-450	4A or Higher					
TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included
TLS4i (8601 Series)						
TLS4B (8601 Series) ¹		330020-751			6	
TLS4c (8601 Series)						
TLS-350/R/PLUS	124/324 or Higher	329358-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately
TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module		1	4
TLS-300i		330230-001	4 Probe / 8 Sensor Interface Module	8		Included
TLS-300C		330513-001	2 Probe / 8 Sensor Options			
Alarm Notification	Normal	Sensor in Normal State - No liquid detected				
	Fuel Alarm	Liquid detected at a minimum of 1.84" (4.67cm)				
	Sensor Out	Sensor not communicating to ATG/Console				
Installation Kit	330020-076	Piping Sump Sensor Mounting Kit is included (see example installation below).				
Specifications			Example Installation			
Operating Principle	Float/magnetic reed switch		 IMPORTANT! DO NOT MOUNT SENSOR TO FLEXIBLE PRODUCT LINE. Existing conduit or piping Product pipe Cable to junction box and seal-off Cable to junction box and seal-off Sump sensor* (installation examples) Sump base			
Product Activation Height	Liquid 1.84" (4.67cm)					
Operating Temp	+32 to +140°F (0 to +60°C)					
Dimensions	12" (30.5cm) high, 1.9" (4.8cm) dia.					
Miscellaneous/Notes	Standard Cable Length: 12ft (3.66m) Installation kit 330020-076 included (see example installation).					
Third Party Evaluation Links	TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles					
Product Link	Piping Sump Sensor					
Warranty with System	1 Yr Parts & Labor					
Warranty (When purchased separately)	1 Yr Parts Only					
Where Used (Typical)						
☒ Dispenser Pan ☒ Spill Containment ☒ STP Sump ☐ Convault Tank			☐ Annular Space ☐ Monitoring Well ☐ Oil/Water Separator Tank			

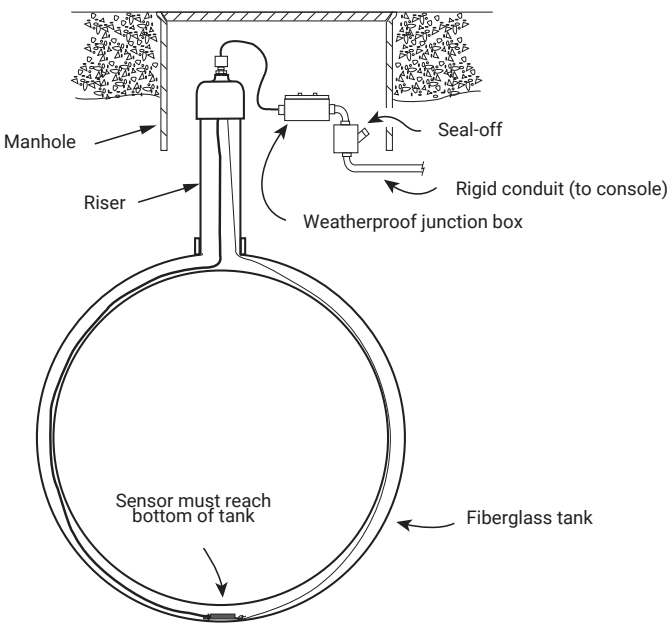
Sensor Description	Non-Discriminating Standalone Dispenser Pan Sensor	The Non-Discriminating Standalone Dispenser Pan Sensor is designed to detect liquid in a dispenser pan containment. When fluid is detected in the dispenser pan, this sensor shuts down (removes) AC power to the dispenser without the need for additional relays, circuitry, wiring, or an ATG System. The separate sensor control interface ensures intrinsically-safe integrity in a Class 1 Div. 1 Group D; Class 1 Zone 0 IIA hazardous area.
Part Number	847990-001	
Category	☐ Discriminating ☒ Non-Discriminating ☐ Position Sensitive	☐ Level Sensing ☐ Static Testing ☐ Hydrostatic
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas	☒ E-15 ☐ E-85 ☐ E-100 ☒ Bio-Diesel 20 ☐ Bio-Diesel 100
Fuel Compatibility	☒ Green Diesel ☐ DEF ☒ Waste Oil ☒ Motor Oil	
Console Compatibility	Not Required	
Alarm Notification	Normal	Dispenser operational
	Liquid Detected	Remove power to the dispenser
	Sensor Out	Remove power to the dispenser
Installation Kit	330020-012	Universal Sensor Mounting Kit (Sold separately)
Specifications	Example Installation	
Operating Principle	Reed switch/float	
Product Activation Height	Gasoline: 1.71" (4.34cm), water: 1.62" (4.11cm)	
Operating Temperature	+32 to +140°F (0 to +60°C) (freezing liquids)	
Dimensions	11.6" (29.4cm) high, 2.2" (5.6cm) dia.	
Miscellaneous/Notes	- Latching alarm circuitry ensures dispenser can not be restarted until hazardous condition has been corrected. - Connects directly to dispenser wiring. - Controls most manufacturer's dispensers. - Cable length: 5ft (1.5m). - Control interface dimensions: 9.4" (23.9cm) high, 2.2" (5.6cm) dia.	
Third Party Evaluation Link	http://nwgldc.org/evals/veeder_root_p.html	
Product Link	Non-Discriminating Stand-Alone Dispenser Pan Sensor	
Warranty with System	1 Yr Parts & Labor	
Warranty (When purchased separately)	1 Yr Parts Only	
Where Used (Typical)	☒ Dispenser Pan ☒ Spill Containment ☒ STP Sump ☐ Convault Tank	
	☐ Annular Space ☐ Monitoring Well ☐ Oil/Water Separator Tank	

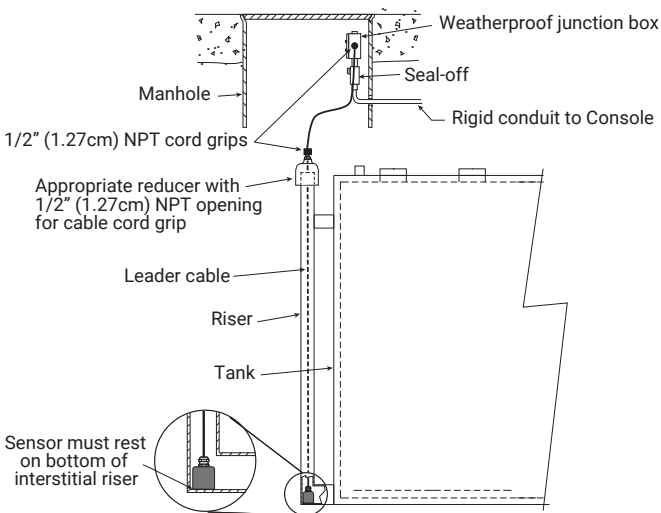


Sensor Description	Position Sensitive Sensor	This sensor is installed in a containment sump or dispenser pan and will detect the presence of, and differentiate between, hydrocarbons and other liquids.					
Part Number	794380-323						
Category	☐ Discriminating ☒ Non-Discriminating ☒ Position Sensitive			☐ Level Sensing ☐ Static Testing ☐ Hydrostatic			
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas			☒ E-15 ☒ E-85 ☒ E-100 ☒ Bio-Diesel 20 ☐ Bio-Diesel 100			
				☒ Green Diesel ☐ DEF ☒ Waste Oil ☒ Motor Oil			
							
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules					
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability	
	TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
	TLS-450	4A or Higher					
	TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Output Module (USIOM-AC)	1	12	Included
	TLS4i (8601 Series)						
	TLS4B (8601 Series) ¹		330020-751			6	
	TLS4c (8601 Series)						
	TLS-350/R/PLUS	124/324 or Higher	329358-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately
	TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module		1	4
TLS-300i	330230-001		4 Probe / 8 Sensor Interface Module	8	Included		
TLS-300C	330513-001		2 Probe / 8 Sensor Options				
Alarm Notification	Normal	Sensor in Normal State - No liquid detected					
	Sensor Out	Sensor not resting on bottom of containment or sensor not communicating to ATG/Console					
	Fuel Alarm	Liquid detected in containment area at approx. 1.5" (3.81cm)					
Installation Kit	330020-012	Universal Sensor Mounting Kit (Sold separately)					
Specifications	Example Installation						
Operating Principle	Product Permeable, Reed Switch /Float						
Product Activation Height	Liquid - Approx. 1.5" (3.81cm)						
Operating Temperature	+32 to +140°F (0 to +60°C)						
Dimensions	12" (30.5cm) high, 2.2" (5.6cm) dia.						
Miscellaneous/Notes	Standard Cable Length: 12ft (3.66m).						
Third Party Evaluation Links	TLS-3XX/TLS-450 Series Consoles TLS4 (8601Series) Consoles						
Product Link	Position Sensitive Sensor						
Warranty with System	1 Yr Parts & Labor						
Warranty (When purchased separately)	1 Yr Parts Only						
Where Used (Typical)	☒ Dispenser Pan ☒ Spill Containment ☒ STP Sump ☐ Convault Tank ☐ Annular Space ☐ Monitoring Well ☐ Oil/Water Separator Tank						
							

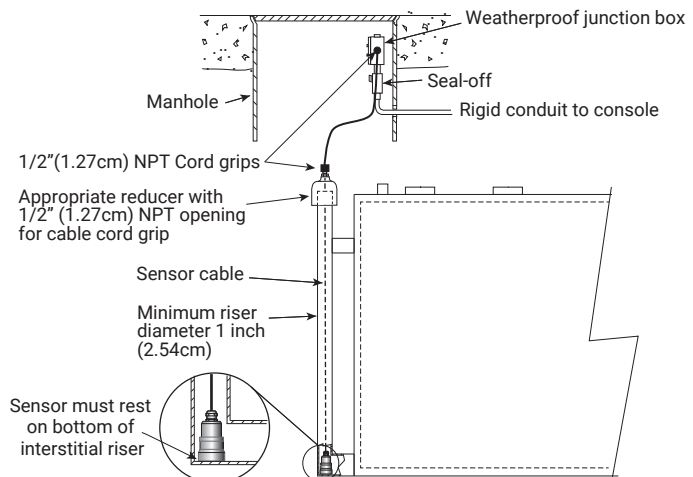
Sensor Description	Solid-State (Optical)-Discriminating Interstitial Sensor for Double-Wall Fiberglass Tanks		The Discriminating Interstitial Sensor for Double-Wall Fiberglass Tanks uses solid-state liquid level sensing technology to detect liquid in the interstitial space of the tank.				
Part Number	794380-343						
Category	☒ Discriminating ☐ Non-Discriminating ☐ Position Sensitive		☐ Level Sensing ☐ Static Testing ☐ Hydrostatic				
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas		☒ E-15 ☐ E-85 ☐ E-100 ☒ Bio-Diesel 20 ☒ Bio-Diesel 100				
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules					
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability	
	TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
	TLS-450	4A or Higher					
	TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included
	TLS4i (8601 Series)						
	TLS4B (8601 Series) ¹						
	TLS4c (8601 Series)		330020-751			6	
	TLS-350/R/PLUS	124/324 or Higher	329956-001	Type A Sensor Interface Module	Up to 8	8	Sold Separately
	TLS-350J	N/A					
	TLS-300i						
	TLS-300C						
Alarm Notification	Normal	Sensor in Normal State - No liquid detected					
	Liquid Alarm	Water detected					
	Fuel Alarm	Fuel or Fuel/Water detected					
	Sensor Out	Sensor not communicating to ATG/Console					
Specifications			Example Installation				
Operating Principle	Optical sensor and conductivity						
Product Activation Height	Fuel or Water - <0.1" (0.25cm)						
Operating Temperature	-40 to +122°F (-40 to +50°C)						
Dimensions	4.3" (11cm) length, 1.5" (3.8cm) width, 0.5" (1.3cm) thick						
Miscellaneous/Notes	Standard Cable 25ft (7.6m) Fits 4 to 10ft (1.2 to 3m) I.D.fiberglass tanks						
Third Party Evaluation Links	TLS-350/TLS-450 Series Consoles TLS4 (8601 Series) Consoles						
Product Link	Solid-State Discriminating Interstitial Sensor						
Warranty with System	1 Yr Parts & Labor						
Warranty (When purchased separately)	1 Yr Parts Only						
Where Used (Typical)	☐ Dispenser Pan ☐ Spill Containment ☐ STP Sump ☒ Convault Tank ☒ Annular Space ☐ Monitoring Well ☐ Oil/Water Separator Tank						

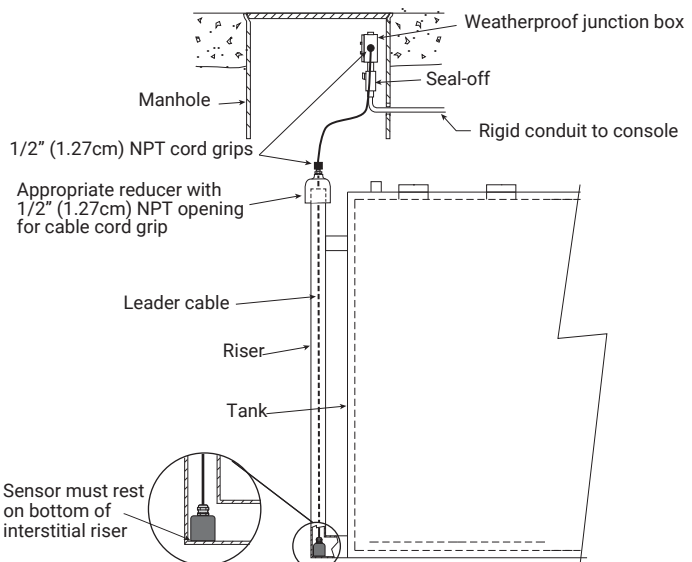
Sensor Description	Interstitial Sensor for Double-Wall Fiberglass Tanks		The Non-Discriminating Interstitial Sensor for Double-Wall Fiber-Glass Tanks detects the presence of liquid in the interstitial space of the tank.					
Part Number	794390-409							
Category	☐ Discriminating ☒ Non-Discriminating ☐ Position Sensitive			☐ Level Sensing ☐ Static Testing ☐ Hydrostatic				
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas			☒ E-15 ☐ E-85 ☐ E-100 ☒ Bio-Diesel 20 ☐ Bio-Diesel 100				
		☒ Green Diesel ☐ DEF ☒ Waste Oil ☒ Motor Oil						
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules						
		Module Part #	Module Description	# of Modules per Console			# of Sensor Inputs per Module	Availability
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB			16	Sold Separately
TLS-450	4A or Higher							
TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included		
TLS4i (8601 Series)								
TLS4B (8601 Series) ¹		330020-751			6			
TLS4c (8601 Series)								
TLS-350/R/PLUS	124/324 or Higher	329358-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately		
TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module		4	Sold Separately		
TLS-300i		330230-001	4 Probe / 8 Sensor Interface Module		8	Included		
TLS-300C		330513-001	2 Probe / 8 Sensor Options					
Alarm Notification	Normal	Sensor in Normal State - No liquid detected						
	Liquid Alarm	Liquid detected						
	Sensor Out	Sensor not communicating to ATG/Console						
Specifications			Example Installation					
Operating Principle	Reed Switch / Float							
Product Activation Height	0.28" (0.71cm)							
Operating Temperature	-4 to +140°F (-20 to +60°C)							
Dimensions	2.2" (5.6cm) length, 1.3" (3.3cm) width, 0.6" (1.5cm) thick							
Miscellaneous/Notes	Standard Cable 25ft (7.6m) Fits 4 to 10ft (1.2 to 3m) I.D.fiberglass tanks							
Third Party Evaluation Links	TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles							
Product Link	Non-Discriminating Interstitial Sensor							
Warranty with System	1 Yr Parts & Labor							
Warranty (When purchased separately)	1 Yr Parts Only							
Where Used (Typical)								
		☐ Dispenser Pan ☐ Spill Containment ☐ STP Sump ☒ Convault Tank		☒ Annular Space ☐ Monitoring Well ☐ Oil/Water Separator Tank				

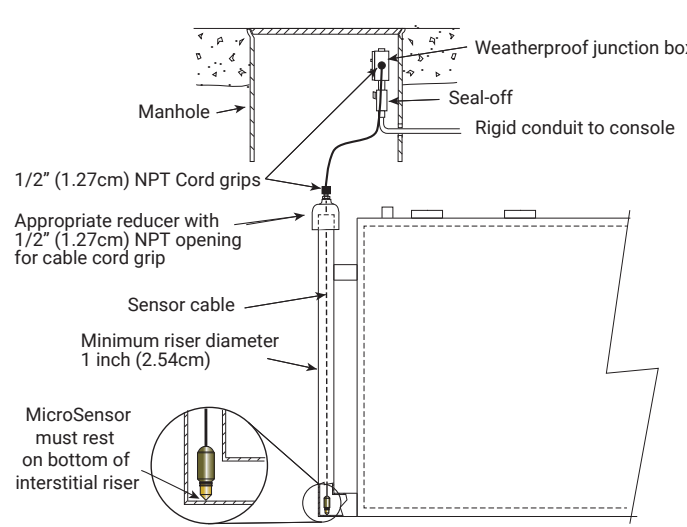
Sensor Description	Solid-State Alternative Ethanol Fluid Interstitial Sensor for Double-Wall Fiberglass Tanks		The Interstitial Sensor for Double-Wall Fiberglass Tanks with high alcohol product uses solid-state liquid level sensing technology to detect liquid in the interstitial space of the tank.			
Part Number	794380-345					
Category	☐ Discriminating ☒ Non-Discriminating ☐ Position Sensitive			☐ Level Sensing ☐ Static Testing ☐ Hydrostatic		
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas			☒ E-15 ☒ E-85 ☒ E-100 ☒ Bio-Diesel 20 ☒ Bio-Diesel 100		
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules				
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
TLS-450	4A or Higher					
TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included
TLS4i (8601 Series)						
TLS4B (8601 Series) ¹		330020-751			6	
TLS4c (8601 Series)						
TLS-350/R/PLUS	124/324 or Higher	329956-001	Type A Sensor Interface Module	Up to 8	8	Sold Separately
TLS-350J	N/A					
TLS-300i						
TLS-300C						
Alarm Notification	Normal	Sensor in Normal State - No liquid detected				
	Fuel Alarm	Liquid detected				
	Sensor Out	Sensor not communicating to ATG/Console				
Specifications			Example Installation			
Operating Principle	Optical - looking at phase changes in the light beams by causing them to interact or interfere with one another					
Product Activation Height	Fuel or Water <0.2" (0.5cm); E85 <0.4" (1cm)					
Operating Temperature	-40 to +122°F (-40 to +50°C)					
Dimensions	4.3" (11cm) length, 1.5" (3.8cm) width, 0.5" (1.3cm) thick					
Miscellaneous/Notes	Standard Cable 25ft (7.6m) fits 4 to 10ft (1.2 to 3m) I.D. fiberglass tanks					
Third Party Evaluation Links	TLS-350/TLS-450 Series Consoles TLS4 (8601 Series) Consoles					
Product Link	Solid-State Alternative Ethanol Fluid Interstitial Sensor					
Warranty with System	1 Yr Parts & Labor					
Warranty (When purchased separately)	1 Yr Parts Only					
Where Used (Typical)	☒ Convault Tank ☒ Annular Space ☐ Monitoring Well ☐ Oil/Water Separator Tank					
	☐ Dispenser Pan ☐ Spill Containment ☐ STP Sump					

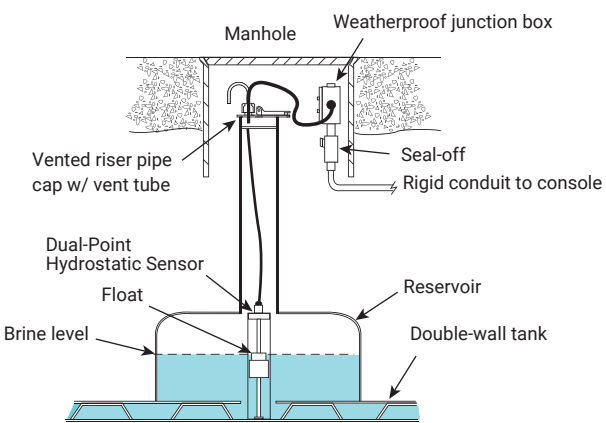
Sensor Description	Interstitial Sensor for Steel Tanks		The Interstitial Sensor for Steel Tanks is non-discriminating and detects the presence of liquid between the double walls of the tank.				
Part Number	794390-420 (16'/4.88m cable); 794390-460 (30'/9.14m cable)						
Category	☐ Discriminating ☒ Non-Discriminating ☐ Position Sensitive			☐ Level Sensing ☐ Static Testing ☐ Hydrostatic			
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas			☒ E-15 ☐ E-85 ☐ E-100 ☒ Bio-Diesel 20 ☐ Bio-Diesel 100			
				☒ Green Diesel ☐ DEF ☒ Waste Oil ☒ Motor Oil			
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules					
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability	
	TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
	TLS-450	4A or Higher					
	TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included
	TLS4i (8601 Series)		330020-751			6	
	TLS4B (8601 Series) ¹						
TLS4c (8601 Series)							
TLS-350/R/PLUS	124/324 or Higher	329358-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately	
TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module		4	Sold Separately	
TLS-300i		330230-001	4 Probe / 8 Sensor Interface Module		8	Included	
TLS-300C		330513-001	2 Probe / 8 Sensor Options				
Alarm Notification	Normal	Sensor in Normal State - No liquid detected		Where Used (Typical)	☒ Annular Space		
	Fuel Alarm	Liquid detected			☐ Dispenser Pan	☐ STP Sump	☐ Monitoring Well
	Sensor Out	Sensor not communicating to ATG/Console			☐ Spill Containment	☒ Convault Tank	☐ Oil/Water Separator Tank
Installation Kit	312020-928	2" (50mm) Interstitial Sensor Riser Cap and Adaptor kit (sold separately)					
Specifications			Example Installation				
Operating Principle	Reed Switch / Float						
Product Activation Height	1.4" (3.56cm)						
Operating Temperature	-4 to +140°F (-20 to +60°C)						
Dimensions	2.5" (6.4cm) high, 1.5" (3.8cm) diameter						
Miscellaneous/Notes	794380-420 (cable 16ft (4.9m)); 794380-460 (cable 30ft (9.1m)); 312020-928 (2" (50mm) Riser cap and adaptor kit)						
Third Party Evaluation Links	TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles						
Product Link	Interstitial Sensor for Steel Tanks						
Warranty with System	1 Yr Parts & Labor						
Warranty (When purchased separately)	1 Yr Parts Only						

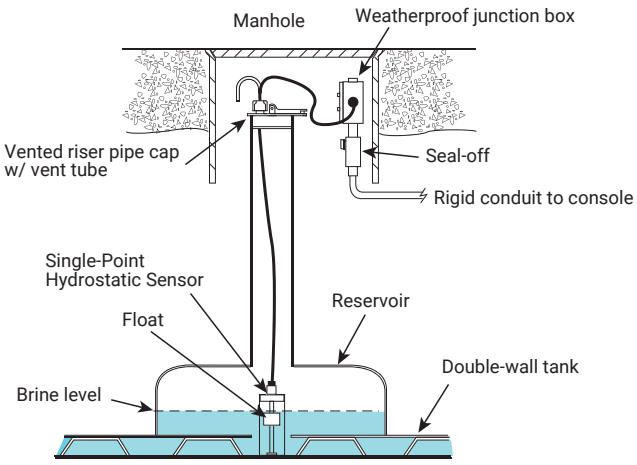
Sensor Description	Position Sensitive Interstitial Sensor for Steel Tanks	This type of sensor detects the presence of liquid in small containment areas (i.e., spill buckets) of double-wall steel tanks. In addition, it provides an alarm when the sensor is not positioned correctly on the bottom of the interstitial space.				
Part Number	794380-333					
Where Used (Typical)	☐ Dispenser Pan ☒ Annular Space ☒ Spill Containment ☐ Monitoring Well ☐ STP Sump ☐ Oil/Water Separator Tank ☐ Convault Tank			Category		
				☐ Discriminating ☒ Non-Discriminating ☒ Position Sensitive ☐ Level Sensing ☐ Static Testing ☐ Hydrostatic		
Fuel Compatibility	☒ Gas ☒ E-15 ☒ Green Diesel ☒ Diesel ☒ E-85 ☐ DEF ☒ Kerosene ☒ E-100 ☒ Waste Oil ☒ Jet Fuel ☒ Bio-Diesel 20 ☒ Motor Oil ☒ Aviation Gas ☒ Bio-Diesel 100					
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules				
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
TLS-450	4A or Higher					
TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included
TLS4i (8601 Series)					6	
TLS4B (8601 Series) ¹		330020-751			8	Sold Separately
TLS4c (8601 Series)						
TLS-350/R/PLUS	124/324 or Higher	329358-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately
TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module		4	Sold Separately
TLS-300i		330230-001	4 Probe / 8 Sensor Interface Module		8	Included
TLS-300C		330513-001	2 Probe / 8 Sensor Options			
Alarm Notification	Normal	Sensor in Normal State - No liquid detected				
	Fuel alarm	Not sitting correctly on bottom of interstitial space or liquid detected				
	Sensor out	Sensor not communicating to ATG/Console				
Installation Kit	312020-928	2" (50mm) Interstitial Sensor Riser Cap kit (Sold separately)				
Specifications	Example Installation					
Operating Principle	Reed Switch/Float					
Product Activation Height	1.4" (3.6cm)					
Operating Temperature	-4 to +140°F (-20 to +60°C)					
Dimensions	3.5" (8.9cm) high, 1.75" (4.4cm) diameter					
Miscellaneous/Notes	Standard Cable Length: 20ft (6.09m); 312020-928 (2" (50mm) Riser cap and adapter kit)					
Third Party Evaluation Links	TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles					
Product Link	Position Sensitive Interstitial Sensor for Steel Tanks					
Warranty with System	1 Yr Parts & Labor					
Warranty (When purchased separately)	1 Yr Parts Only					

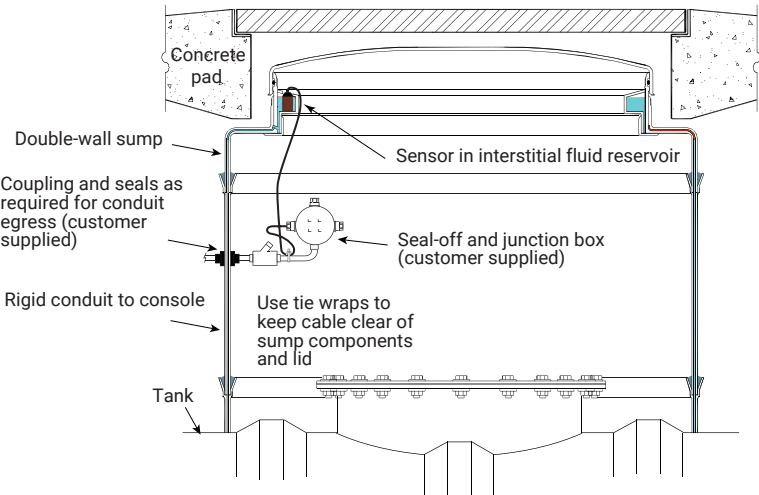


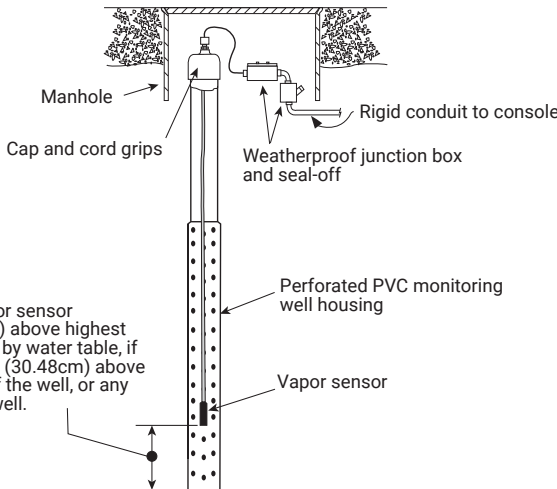
Sensor Description	Interstitial High Alcohol Sensor for Steel Tanks		The Interstitial Sensor for Steel Tanks with high alcohol product detects the presence of liquid between the double walls of the tank.			
Part Number	794380-430					
Category	☐ Discriminating ☒ Non-Discriminating ☐ Position Sensitive ☐ Level Sensing ☐ Static Testing ☐ Hydrostatic					
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas ☒ E-15 ☒ E-85 ☒ E-100 ☒ Bio-Diesel 20 ☒ Bio-Diesel 100 ☒ Green Diesel ☐ DEF ☒ Waste Oil ☒ Motor Oil					
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules				
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
TLS-450	4A or Higher					
TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included
TLS4i (8601 Series)						
TLS4B (8601 Series) ¹		330020-751			6	
TLS4c (8601 Series)						
TLS-350/R/PLUS	124/324 or Higher	329358-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately
TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module		4	Sold Separately
TLS-300i		330230-001	4 Probe / 8 Sensor Interface Module		8	Included
TLS-300C		330513-001	2 Probe / 8 Sensor Options			
Alarm Notification	Normal	Sensor in Normal State - No liquid detected				
	Fuel Alarm	Water or Fuel detected				
	Sensor Out	Sensor not communicating to ATG/Console				
Installation Kit	312020-928	2" (50mm) Interstitial Sensor Riser Cap kit (Sold separately)				
Specifications			Example Installation			
Operating Principle	Reed Switch/Float					
Product Activation Height	1.1" (2.8cm)					
Operating Temperature	-4 to +140°F (-20 to +60°C)					
Dimensions	2.5" (6.4cm) high, 1.5" (3.8cm) diameter					
Miscellaneous/Notes	Standard cable 15ft (4.57m); 312020-928 2" (50mm) Riser cap and adapter kit					
Third Party Evaluation Links	TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles					
Product Link	Interstitial High Alcohol Sensor for Steel Tanks					
Warranty with System	1 Yr Parts & Labor					
Warranty (When purchased separately)	1 Yr Parts Only					
Where Used (Typical)	☒ Annular Space ☐ Dispenser Pan ☐ STP Sump ☐ Monitoring Well ☐ Spill Containment ☒ Convault Tank ☐ Oil/Water Separator Tank					

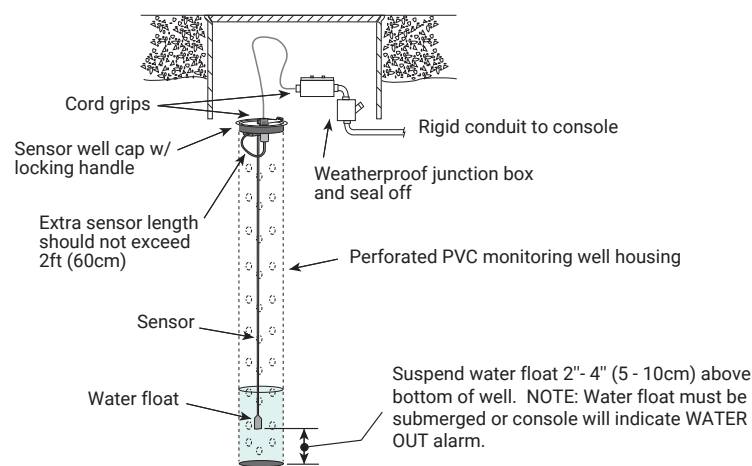
Sensor Description	MicroSensor	The non-discriminating small, easy to install solid-state MicroSensor is designed to detect liquid in the interstitial space of a steel tank or a fill riser containment.					
Part Number	794380-344						
Category	☐ Discriminating ☒ Non-Discriminating ☐ Position Sensitive				☐ Level Sensing ☐ Static Testing ☐ Hydrostatic		
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas				☒ E-15 ☒ E-85 ☒ E-100 ☒ Bio-Diesel 20 ☒ Bio-Diesel 100		
		☒ Green Diesel ☒ DEF ☒ Waste Oil ☒ Motor Oil					
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules					
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module		Availability
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16		Sold Separately
TLS-450	4A or Higher						
TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included	
TLS4i (8601 Series)							
TLS4B (8601 Series) ¹		6					
TLS4c (8601 Series)							
TLS-350/R/PLUS	124/324 or Higher	329956-001	Type A Interface Module	Up to 8	8	Sold Separately	
TLS-350J	N/A						
TLS-300i							
TLS-300C							
Alarm Notification	Normal	Sensor in Normal State - No liquid detected					
	Fuel Alarm	Liquid detected at a minimum of 1" (2.54cm)					
	Sensor Out	Sensor not communicating to ATG/Console					
Installation Kit	312020-928	2" (50mm) Interstitial Sensor Riser Cap and Adapter kit (Sold separately)					
Specifications			Example Installation				
Operating Principle	Optical						
Product Activation Height	1" (2.54cm)						
Operating Temperature	-40 to +122°F (-40 to +50°C)						
Dimensions	Dia. 0.63" (16mm), Length 2" (51mm)						
Miscellaneous/Notes	Standard Cable Length: 25ft (7.6m); 312020-928 (2" (50mm) Riser cap and Adapter kit)						
Third Party Evaluation Links	TLS-350/TLS-450 Series Consoles TLS4 (8601 Series) Consoles						
Product Link	MicroSensor						
Warranty with System	1 Yr Parts & Labor						
Warranty (When purchased separately)	1 Yr Parts Only						
Where Used (Typical)							
		☐ Dispenser Pan ☐ Spill Containment ☐ STP Sump ☒ Convault Tank					
		☒ Annular Space ☐ Monitoring Well ☐ Oil/Water Separator Tank					

Sensor Description	Dual-Point Hydrostatic Reservoir Sensor (Brine-Filled Double-Wall Tank Sensor)	The Hydrostatic Reservoir Sensor accurately detects fluid level change in the reservoir and interstice of a double wall storage tank. The Dual-Point version is ideal for high groundwater areas, and can differentiate between a high level alarm condition and a low level alarm condition. If an inner-wall leak occurs, the brine seeps into the tank triggering a low level alarm. If an outer wall leak occurs, fluid seeps into the interstice triggering a high level alarm.					
Part Number	794380-303						
Category	☐ Discriminating ☐ Non-Discriminating ☐ Position Sensitive			☐ Level Sensing ☐ Static Testing ☒ Hydrostatic			
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas			☒ E-15 ☒ E-85 ¹ ☐ E-100 ☒ Bio-Diesel 20 ☐ Bio-Diesel 100			
			☒ Green Diesel ☐ DEF ☒ Waste Oil ☒ Motor Oil				
							
¹ Single use only (Test per Sensor Operability Guide in E-10 or less)							
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules					
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability	
	TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
	TLS-450	4A or Higher					
	TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included
	TLS4i (8601 Series)						
	TLS4B (8601 Series) ¹		330020-751			6	
	TLS4c (8601 Series)						
	TLS-350/R/PLUS	124/324 or Higher	329958-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately
	TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module		1	4
TLS-300i	330230-001		4 Probe / 8 Sensor Interface Module	8	Included		
TLS-300C	330513-001		2 Probe / 8 Sensor Options				
Alarm Notification	Normal	Float is in the Center position (correct amount of brine in reservoir)					
	Low Liquid	Brine drops below 1.2" (3cm)		Where Used (Typical)			
	High Liquid	Brine rises above 13.13" (33.4cm)		☐ Dispenser Pan ☐ STP Sump ☒ Annular Space			
	Sensor Out	Sensor not communicating to ATG/Console		☐ Spill Containment ☒ Convault Tank ☐ Monitoring Well ☐ Oil/Water Separator Tank			
Specifications			Example Installation				
Operating Principle	Reed Switch /Float						
Product Activation Height	Low 1.2" (3cm), High 13.13" (33.4cm)						
Operating Temp	-13 to +122°F (-25 to +50°C)						
Dimensions	17.3" (43.9cm) High, 2.5" (6.4cm) Dia.						
Miscellaneous/Notes	• Standard Cable Length: 12ft (3.65m) • Vented riser cap assembly included • Reservoir solutions: Up to 50% ethylene glycol in water; up to 50% propylene glycol in water; salt brine solution of up to 30% CaCl.						
Third Party Evaluation Links	TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles						
Product Link	Dual-Point Hydrostatic Reservoir Sensor						
Warranty with System	1 Yr Parts & Labor						
Warranty (When purchased separately)	1 Yr Parts Only						

Sensor Description	Single-Point Hydrostatic Reservoir Sensor (Brine-Filled Double-Wall Tank Sensor)	The Hydrostatic Reservoir Sensor accurately detects fluid level change in the reservoir and interstice of a double-wall storage tank. The Single-Point version can be used in low groundwater locations. If an inner-wall leak occurs, the brine seeps into the tank triggering a fuel alarm. If the outer wall leaks, the brine seeps out of the tank interstice triggering a fuel alarm.					
Part Number	794380-301						
Category	☐ Discriminating ☐ Non-Discriminating ☐ Position Sensitive			☐ Level Sensing ☐ Static Testing ☒ Hydrostatic			
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas			☒ E-15 ☒ E-85 ¹ ☐ E-100 ☒ Bio-Diesel 20 ☐ Bio-Diesel 100			
¹ Single use only (Test per Sensor Operability Guide in E-10 or less)							
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules					
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability	
	TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
	TLS-450	4A or Higher					
	TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included
	TLS4i (8601 Series)		330020-751				
	TLS4B (8601 Series) ¹						
	TLS4c (8601 Series)						
	TLS-350/R/PLUS	124/324 or Higher	329958-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately
	TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module		1	4
TLS-300i	330230-001		4 Probe / 8 Sensor Interface Module	8	Included		
TLS-300C	330513-001		2 Probe / 8 Sensor Options				
Alarm Notification	Normal	Float is in the UP position (correct amount of brine in reservoir)		Where Used (Typical)			
	Fuel Alarm	Brine level below 1.74" (4.4cm)		☐ Dispenser Pan ☐ STP Sump ☐ Monitoring Well			
	Sensor Out	Sensor not communicating to ATG/Console		☐ Spill Containment ☒ Convault Tank ☐ Oil/Water Separator Tank			
Specifications			Example Installation				
Operating Principle	Reed Switch /Float						
Product Activation Height	1.75" (4.4cm)						
Operating Temperature	-13 to +135°F (-25 to +57°C)						
Dimensions	6" (15cm) high, 2.5" (6.4cm) dia.						
Miscellaneous/Notes	- Standard Cable Length: 12ft (3.65m) - Vented riser cap assembly included - Reservoir solutions: Up to 50% ethylene glycol in water; up to 50% propylene glycol in water; salt brine solution of up to 30% CaCl						
Third Party Evaluation Links	TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles						
Product Link	Single-Point Hydrostatic Reservoir Sensor						
Warranty with System	1 Yr Parts & Labor						
Warranty (When purchased separately)	1 Yr Parts Only						

Sensor Description	Single-Point Mini-Hydrostatic Sensor for Double-Wall Sumps		The Single-Point Mini-Hydrostatic Sensor accurately detects fluid level change in the interstice reservoir of a double-wall sump. If a leak occurs in the sump interstice, the brine seeps out of the reservoir triggering a low level alarm.			
Part Number	794380-304					
Category	☐ Discriminating ☐ Non-Discriminating ☐ Position Sensitive ☐ Level Sensing ☐ Static Testing ☒ Hydrostatic					
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas ☒ E-15 ☒ E-85 ☒ E-100 ☒ Bio-Diesel 20 ☒ Bio-Diesel 100 ☒ Green Diesel ☐ DEF ☒ Waste Oil ☒ Motor Oil					
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules				
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
TLS-450	4A or Higher					
TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included
TLS4i (8601 Series)						
TLS4B (8601 Series) ¹		330020-751			6	
TLS4c (8601 Series)						
TLS-350/R/PLUS	124/324 or Higher	329958-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately
TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module		4	Sold Separately
TLS-300i		330230-001	4 Probe / 8 Sensor Interface Module		8	Included
TLS-300C		330513-001	2 Probe / 8 Sensor Options			
Alarm Notification	Normal	Float is in UP position (correct amount of brine in reservoir)				
	Fuel Alarm	Float is in DOWN position (low brine level in reservoir)				
	Sensor Out	Sensor not communicating to ATG/Console				
Specifications			Example Installation			
Operating Principle	Reed Switch/Float					
Product Activation Height	0.79" (2cm)					
Operating Temperature	-13 to +122°F (-25 to +50°C)					
Dimensions	2.5" (6.4cm) high, 1.5" (3.8cm) dia.					
Miscellaneous/Notes	Standard Cable Length: 8ft (2.43m); up to 50% ethylene glycol in water; up to 50% propylene glycol in water; salt brine solution of up to 30% CaCl.					
Third Party Evaluation Links	TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles					
Product Link	Single-Point Mini-Hydrostatic Sensor					
Warranty with System	1 Yr Parts & Labor					
Warranty (When purchased separately)	1 Yr Parts Only					
Where Used (Typical)	☐ Convault Tank ☒ Annular Space ☐ Monitoring Well ☐ Oil/Water Separator Tank ☐ Dispenser Pan ☐ Spill Containment ☐ STP Sump					

Sensor Description	Vapor Sensor	The Vapor Monitoring Well Sensor detects hydrocarbon vapor exceeding the programmed threshold limit in the monitoring well.				
Part Number	794390-700					
Category	☐ Discriminating ☐ Non-Discriminating ☐ Position Sensitive ☐ Level Sensing			☐ Static Testing ☐ Hydrostatic ☒ Vapor ☐ Groundwater ☐ Oil/Water Separator		
Fuel Compatibility	☒ Gas ☐ Diesel ☐ Kerosene ☒ Jet Fuel ☒ Aviation Gas			☒ E-15 ☐ E-85 ☐ E-100 ☐ Bio-Diesel 20 ☐ Bio-Diesel 100		
Console Compatibility (*International Only ¹)	Recommended Min. Console Software	Sensor Interface Modules				
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	8	Sold Separately
TLS-450	4A or Higher					
TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	6	Included
TLS4i (8601 Series)		330020-751			4	
TLS4B (8601 Series) ¹						
TLS4c (8601 Series)						
TLS-350/R/PLUS	124/324 or Higher	329357-001	Vapor Sensor Interface Module	Up to 8	5	Sold Separately
TLS-350J	N/A					
TLS-300i						
TLS-300C						
Alarm Notification	Short Alarm	A short has occurred in the sensor wiring or in the sensor.				
	Water Alarm	The vapor sensor is immersed in water and is incapable of detecting fuel vapors.				
	Fuel Alarm	Fuel vapors are present in the area being monitored by the sensor.				
	Sensor Out Alarm	Sensor setup was performed incorrectly; it is disconnected, or, it is not functioning properly.				
Installation Kit	312020-939	4" (100mm) Vapor Sensor Riser Cap (Sold separately)				
Specifications			Example Installation			
Operating Principle	Adsistor		 Manhole Cap and cord grips Rigid conduit to console Weatherproof junction box and seal-off Perforated PVC monitoring well housing Vapor sensor Suspend vapor sensor 12" (30.48cm) above highest level reached by water table, if known; or 12" (30.48cm) above the bottom of the well, or any water in the well.			
Product Activation Height	Gasoline Vapor >500 ppm					
Operating Temperature	-4 to +140°F (-20 to +60°C)					
Dimensions (Sensor)	4.9" (12.4cm) long, 1.1" (2.8cm) dia.					
Miscellaneous/Notes	Standard Cable 18ft (5.5m)					
Third Party Evaluation Links	TLS-350/TLS-450 Series Consoles TLS4 (8601 Series) Consoles					
Product Link	Vapor Sensor					
Warranty with System	1 Yr Parts & Labor					
Warranty (When purchased separately)	1 Yr Parts Only					
Where Used (Typical)						
☐ Dispenser Pan ☐ Spill Containment ☐ STP Sump ☐ Convault Tank		☐ Annular Space ☒ Monitoring Well ☐ Oil/Water Separator Tank				

Sensor Description		Groundwater Sensor		The Groundwater Sensor detects free hydrocarbons in the C5 to C16 range on the water table in up to 20ft (6.1m) deep monitoring wells.			
Part Number		794380-621 for 7-10ft (2-3m) wells; 794380-622 for 10-5ft (3-4.5m) wells; 794380-624 for 15-20 ft (4.5-6m) wells					
Category		☐ Discriminating ☐ Non-Discriminating ☐ Position Sensitive ☐ Level Sensing ☐ Static Testing ☐ Hydrostatic ☐ Vapor ☒ Groundwater ☐ Oil/Water Separator					
Fuel Compatibility		☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas ☒ E-15 ☐ E-85 ☐ E-100 ☒ Bio-Diesel 20 ☐ Bio-Diesel 100 ☒ Green Diesel ☐ DEF ☒ Waste Oil ☒ Motor Oil					
Console Compatibility (*International Only ¹)		Recommended Min. Console Software	Sensor Interface Modules				
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability	
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	8	Sold Separately	
TLS-450	4A or Higher						
TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	6	Included	
TLS4i (8601 Series)		330020-751			4		
TLS4B (8601 Series) ¹							
TLS4c (8601 Series)							
TLS-350/R/PLUS	124/324 or Higher	329399-001	Groundwater Sensor Interface Module	Up to 8	5	Sold Separately	
TLS-350J	N/A						
TLS-300i							
TLS-300C							
Alarm Notification	Normal	Sensor in water - no hydrocarbons detected					
	Water Out	Sensor not in water - well dry					
	Fuel Alarm	Permeable material saturated with Fuel					
	Sensor Out	Sensor not communicating to ATG/Console					
Specifications		Example Installation					
Operating Principle		Electrical conductivity					
Product Activation Height		0.02" (0.5mm)					
Operating Temperature		+32 to +104°F (0 to +40°C)					
Dimensions (Water Float)		4.9" (12.4cm) long, 1.1" (2.8cm) dia.					
Miscellaneous/Notes		Locking cap included; cable length 64" (162.6cm)					
Third Party Evaluation Links		TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles					
Product Link		Groundwater Sensor					
Warranty with System		1 Yr Parts & Labor					
Warranty (When purchased separately)		1 Yr Parts Only					
Where Used (Typical)		☐ Dispenser Pan ☐ Spill Containment ☐ STP Sump ☐ Convault Tank ☐ Annular Space ☒ Monitoring Well ☐ Oil/Water Separator Tank					
							

Sensor Description	Oil / Water Separator Sensor (OWSS)	The Oil Water Separator Sensor (OWSS) allows you to utilize your existing Veeder-Root system for your Oil Water Separator tank. The OWSS facilitates operation of the tank by monitoring product thresholds, and will activate alarms on the TLS monitoring system when tank contents exceed a predetermined threshold. The probe also provides the conditions for these alarms and a full alarm history.				
Part Number	794690-xxx					
Category	☐ Discriminating ☐ Non-Discriminating ☐ Position Sensitive ☐ Level Sensing		☐ Static Testing ☐ Hydrostatic ☐ Vapor ☐ Groundwater ☒ Oil/Water Separator			
Fuel Compatibility	☒ Gas ☒ Diesel ☒ Kerosene ☒ Jet Fuel ☒ Aviation Gas		☒ E-15 ☐ E-85 ☐ E-100 ☒ Bio-Diesel 20 ☐ Bio-Diesel 100			
Console Compatibility (International Only¹)	Recommended Min. Console Software	Sensor Interface Modules				
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
TLS-450	4A or Higher					
TLS4 (8601 Series) ¹	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included
TLS4i (8601 Series)						
TLS4B (8601 Series) ¹		330020-751				
TLS4c (8601 Series)						
TLS-350/R/PLUS	124/324 or Higher	329358-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately
TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module	1	4	Sold Separately
TLS-300i		330230-001	4 Probe / 8 Sensor Interface Module		8	Included
TLS-300C		330513-001	2 Probe / 8 Sensor Options			
Alarm Notification	Normal	Tank is properly setup with liquid				
	Liquid Warning	Oil is present in tank				
	Liquid Alarm	Oil has reached its maximum volume, remove from tank				
	Sensor Out	Sensor not communicating to ATG/Console				
Specifications						
Operating Principle	Reed Switch/Float					
Product Activation Height	Custom-Based on Tank Configuration					
Operating Temperature	0 to +140°F (0 to +60°C)					
Dimensions	Custom-Based on Tank Configuration					
Miscellaneous/Notes	Standard Cable Length: 12ft (3.66m) - See Appendix B in this manual for sensor sizing					
Product Link	Oil Water Separator Sensor					
Warranty with System	1 Yr Parts & Labor					
Warranty (When purchased separately)	1 Yr Parts Only					
Where Used (Typical)	☐ Dispenser Pan ☐ Annular Space ☐ Spill Containment ☐ Monitoring Well ☐ STP Sump ☒ Oil/Water Separator Tank ☐ Convault Tank					

Appendix A - Sensor Type Programming Table

The table below is helpful when selecting Sensor Type (for TLS3 Series consoles) or Sensor Model (for TLS4/8601 and TLS-450 and TLS-450PLUS consoles) during sensor setup.

Sensor Type Programming Table for TLS Consoles

Sensor	Part Number	Sensor Category (Location)	TLS3 Series Sensor Type	TLS4/8601 Series TLS-450 and TLS-450PLUS Sensor Model
Discriminating Dispenser Pan and Sump - Standard	794380-322 (DPS), 794380-352 (CSS)	Sump/Pan	Liquid Sensor Setup: Sensor Type - Dual Float Discriminating	Device Setup Liquid Sensor: Model - Dual Float Discriminating
Solid-State Discr. Dispenser Pan and Containment Sump - Optical	794380-320 (DPO), 794380-350 (CSO)	Sump/Pan	3-Wire C.L. Setup: Sensor Mode - Standard	Device Setup Type B Sensor: Model - Ultra/Z-1 (Standard)
Mag Sump	857080-XXX	Sump/Pan	Smart Sensor Setup: Sensor Category- Mag Sensor	Device Setup MAG Sensor
Solid-State Dispenser Pan and Containment Sump	794380-321 (DP); 794380-351 (CS)	Sump/Pan	2-Wire C.L. Setup: Sensor Type - Ultra 2	Device Setup Type A Sensor: Model - Ultra 2
Piping Sump-12' (3.66m)	794380-208	Sump/Pan	Liquid Sensor Setup: Sensor Type - Tri-State Liquid	Device Setup Liquid Sensor: Model - Tri-State
Position Sensitive High Alcohol Compatible!	794380-323 (12' Cable)	Sump/Pan	Liquid Sensor Setup: Sensor Type - Tri-State Liquid	Device Setup Liquid Sensor: Model - Tri-State
Solid-State Discr. Interstitial for Double-Wall Fiberglass Tanks with 25' (7.62m) Cable	794380-343	Annular Space	2-Wire C.L. Setup: Sensor Type - Discrim Interstitial	Device Setup Type A Sensor: Model - Discrim. Interstitial
Interstitial for Double-Wall Fiberglass Tanks	794380-409	Annular Space	Liquid Sensor Setup: Sensor Type - Tri-State Liquid	Device Setup Liquid Sensor: Model - Tri-State
Solid-State Interstitial High Alcohol for Double-Wall Fiberglass Tanks High Alcohol Compatible!	794380-345	Annular Space	2-Wire C.L. Setup: Sensor Type - Ultra 2	Device Setup Type A Sensor: Model - Ultra 2
Interstitial for Steel Tanks	794380-4X0	Annular Space	Liquid Sensor Setup: Sensor Type - Tri-State Liquid	Device Setup Liquid Sensor: Model - Tri-State
Position Sensitive Interstitial for Steel Tanks with 20' (6.1m) Cable High Alcohol Compatible!	794380-333	Annular Space	Liquid Sensor Setup: Sensor Type - Tri-State Liquid	Device Setup Liquid Sensor: Model - Tri-State
Interstitial High Alcohol for Steel Tanks with 15' (4.57m) Cable High Alcohol Compatible!	794380-430	Annular Space	Liquid Sensor Setup: Sensor Type - Tri-State Liquid	Device Setup Liquid Sensor: Model - Tri-State
MicroSensor High Alcohol Compatible!	794380-344	Annular Space	2-Wire C.L. Setup: Sensor Type - Ultra 2	Device Setup Type A Sensor: Model - Ultra 2
Hydrostatic Reservoir	794380-301 (1 float)	Annular Space	Liquid Sensor Setup: Sensor Type - Tri-State Liquid	Device Setup Liquid Sensor: Model - Tri-State
	794380-303 (1 float)	Annular Space	Liquid Sensor Setup: Sensor Type - Dual Point Hydrostatic	Device Setup Liquid Sensor: Model - Dual-Point Hydrostatic
Single-Point Mini-Hydrostatic for Double-Wall Sumps	794380-304	Annular Space	Liquid Sensor Setup: Sensor Type - Tri-State Liquid	Device Setup Liquid Sensor: Model - Tri-State
Vapor Monitoring Well	794390-700	Monitor Well	Vapor Sensor Setup	Device Setup Vapor Sensor
Groundwater	794380-62X	Monitor Well	Groundwater Sensor Setup	Device Setup Groundwater Sensor
Oil Water Separator	794690-XXX	Oil Water Separator Tank	Liquid Sensor Setup: Sensor Type - Dual Float Discriminating	Device Setup Liquid Sensor: Model - Dual Float Discriminating

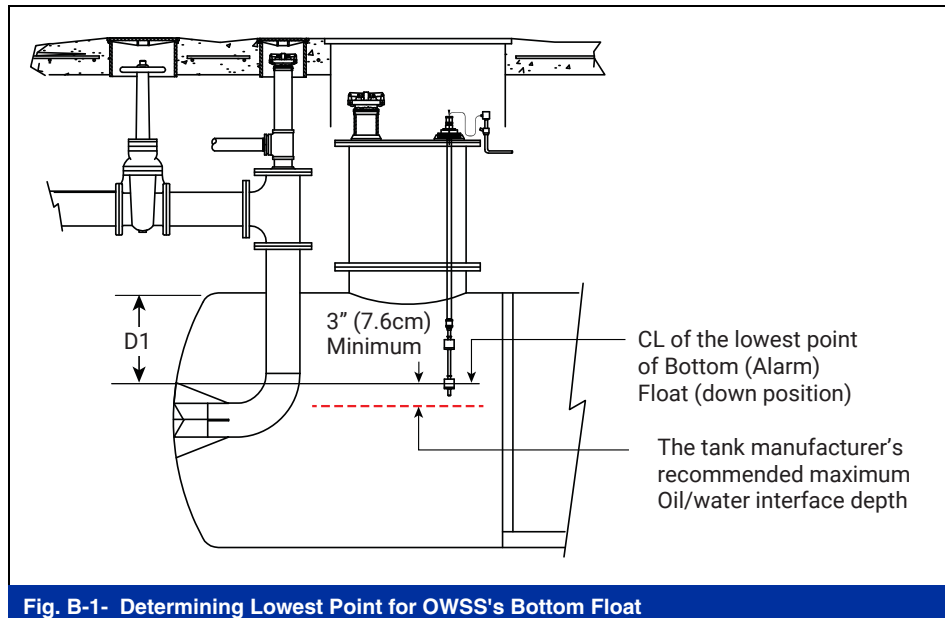
Appendix B - How To Order An Oil Water Separator Sensor (OWSS)

Sensor Sizing

To determine the correct sensor length for the oil water separator tank application use the manufacturer's tank chart to determine height-to-volume thresholds for warning and alarm conditions and make three measurements, including verifying fluid depths on the manufacturer's tank chart.

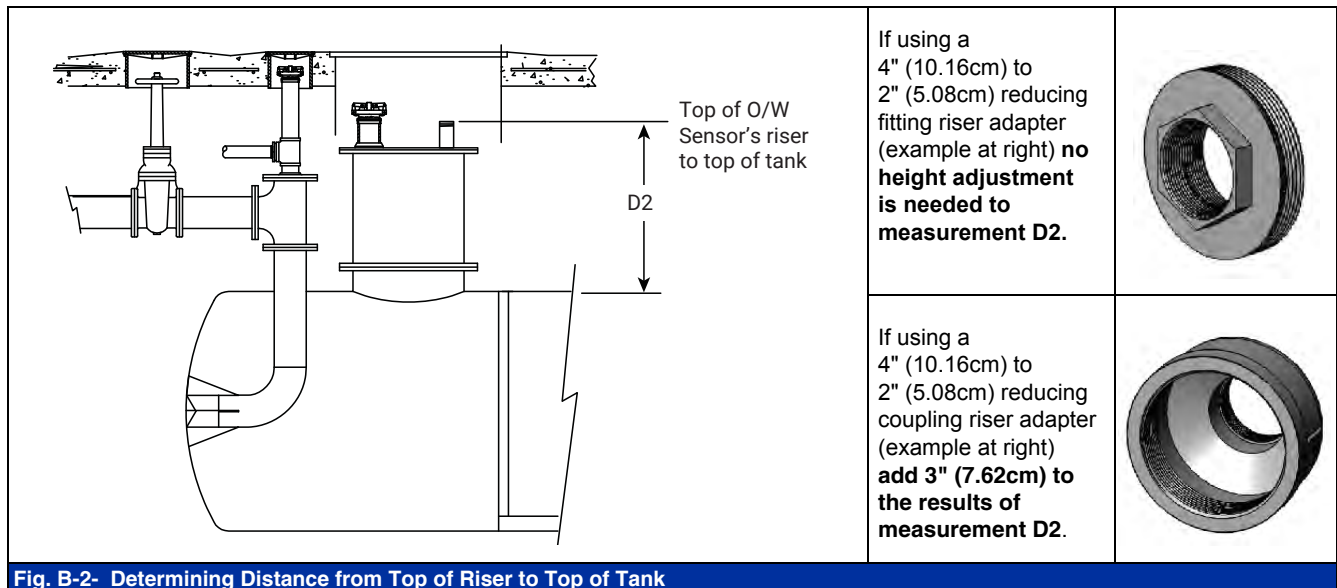
1. Determining the Lowest Point of the Bottom (Alarm) Float

Measure and record the distance from inside the top of the tank to the maximum depth of waste oil water interface in the tank as recommended by the tank's manufacturer (Fig.B-1). Subtract 3" (7.62cm) from this measurement to determine the lowest permissible point in the tank for the centerline of the sensor's bottom (alarm) float and **note this measurement as D1**.



2. Determining Distance from Top of Riser to Top of Tank

Measure from the top of the riser down to the top of the tank and if using the riser reducing 4x2 fitting, **note this measurement as D2**. OR, if using the riser reducing 4x2 coupling, add 3" (7.62cm) to the measured distance and **note this measurement as D2** (Fig.B-2).



3. Determining the Top (Warning) Float Position

Consult the tank chart to determine the height of the top warning level (centerline of the Top Float). Measure the distance from the top of the tank to the centerline of the Top Float (Fig.B-3).

Note this measurement as D3.

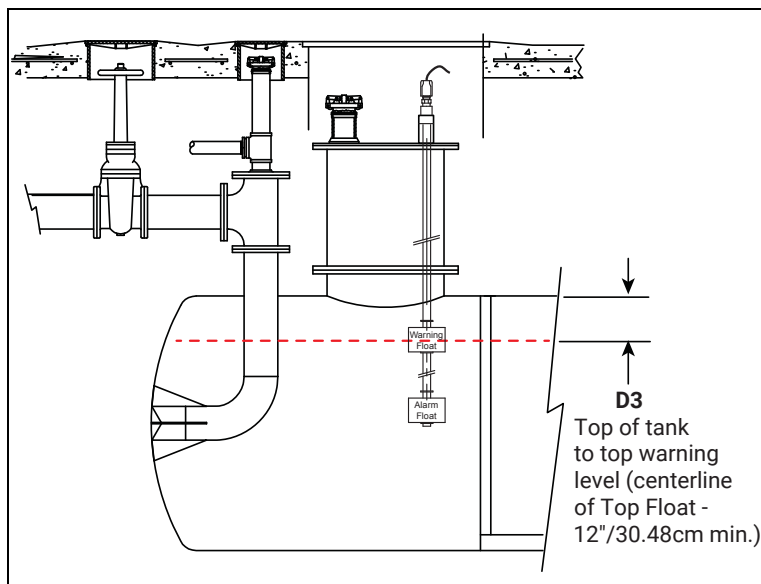


Fig. B-3- Determining the Top (Warning) Float Position

4. Determining Correct Sensor to Order

Use the D1, D2 and D3 measurements made in steps 1 - 3 to determine the part number of the sensor from the Veeder-Root Oil Water Separator Sensor matrix shown in Fig.B-4.

For example: D1 = 33" (83.82cm), D2 = 24.5" (62.23cm), D3 = 13" (33.02cm)

D2 + D3 = Top Float position, i.e., 24.5" (62.23cm) + 13" (33.02cm) = 37.5" (95.25cm) (Dimension A in the Veeder-Root P/N matrix)

D1 - D3 = Bottom Float position, i.e., 33" (83.82cm) - 13" (33.02cm) = 20" (50.8cm) (Dimension B in the Veeder-Root P/N matrix)

Using the OWSS float positions calculated in the example above, the Top Float (Warning Float) would activate at 13" (33.02cm) below the top of the tank and the Bottom Float (Alarm Float) would activate at 33" (83.82cm) below the top of the tank. The correct part number for these example float positions would be 794690-053.

Round dimension A or B down to the nearest available option if necessary. Note: Doing so will impact the float Warnings and Alarms generated on the TLS system.

Alarm Conditions

Alarm Type	Alarm Condition
Liquid Warning	Oil present in tank
Liquid Alarm	Oil has reached its maximum volume, remove from tank
Sensor Out Alarm	No communication to ATG
Normal	Tank is properly setup with liquid

Order OWSS part number 794690-XXX, where XXX equals the three digits where Dimensions A and B intersect in the part number matrix:

		DIMENSION "B"									
		5"	10"	15"	20"	25"	30"	35"	40"	45"	50"
DIMENSION "A"	18"	-010	-011	-012	-013	-014	-015	-016	-017	-018	-019
	22"	-020	-021	-022	-023	-024	-025	-026	-027	-028	-029
	26"	-030	-031	-032	-033	-034	-035	-036	-037	-038	-039
	30"	-040	-041	-042	-043	-044	-045	-046	-047	-048	-049
	34"	-050	-051	-052	-053	-054	-055	-056	-057	-058	-059
	38"	-060	-061	-062	-063	-064	-065	-066	-067	-068	-069
	42"	-070	-071	-072	-073	-074	-075	-076	-077	-078	-079
	46"	-080	-081	-082	-083	-084	-085	-086	-087	-088	-089
	50"	-090	-091	-092	-093	-094	-095	-096	-097	-098	-099
	54"	-100	-101	-102	-103	-104	-105	-106	-107	-108	-109
	58"	-110	-111	-112	-113	-114	-115	-116	-117	-118	-119
	62"	-120	-121	-122	-123	-124	-125	-126	-127	-128	-129
	66"	-130	-131	-132	-133	-134	-135	-136	-137	-138	-139
	70"	-140	-141	-142	-143	-144	-145	-146	-147	-148	-149
	74"	-150	-151	-152	-153	-154	-155	-156	-157	-158	-159
	78"	-160	-161	-162	-163	-164	-165	-166	-167	-168	-169
	82"	-170	-171	-172	-173	-174	-175	-176	-177	-178	-179
	86"	-180	-181	-182	-183	-184	-185	-186	-187	-188	-189
	90"	-190	-191	-192	-193	-194	-195	-196	-197	-198	-199

Fig. B-4- Oil Water Separator Sensor Part Number Matrix

Appendix C - Direct Burial Cable

The Veeder-Root direct burial cable system provides everything needed for an alternative wiring installation method for use with our probes and sensors. Installation of buried cable should only be done in those locations where existing conduit is not available, and where local codes permit the use of buried cable instead of conduit, and epoxy splices instead of junction boxes. Before considering buried cable runs, check with the local authority having jurisdiction to be sure that direct burial practices are acceptable at your location.

If you are unfamiliar with direct burial techniques, you should consider either of two Veeder-Root kits:

- Direct Burial Cable Site Preparation Kit (P/N 848100-500) which contains the Direct Burial Installation Manual, a splice kit installation manual and the 890-SL joint sealant instruction guide.
- Direct Burial Cable Demonstration Kit (P/N 848100-502) which contains one splice kit with installation instructions, a 890-SL joint sealant instruction guide, a 6" (15.24cm) piece of 2 conductor direct burial wire and filler rod.

After reviewing the contents of these kits, and after verifying local code requirements, you should be much more informed as to the applicability of this wiring method for your site.

Direct Burial Cable Specifications

2-CONDUCTOR, SHIELDED CABLE		3-CONDUCTOR, SHIELDED CABLE	
Item	Description	Item	Description
Primaries		Primaries	
Conductor	#18 AWG (19/30) tinned copper	Conductor	#18 AWG (19/30) tinned copper
Insulation Type	Fluoropolymer	Insulation Type	Fluoropolymer
Primary O.D.	0.063" (1.6mm) nominal	Primary O.D.	0.063" (1.6mm) nominal
Drain	#20 AWG (7/28) tinned copper, located under the tape	Drain	#20 AWG (7/28) tinned copper, located under the tape
Jacket		Jacket	
Insulation Type	Fluoropolymer	Insulation Type	Fluoropolymer
Final O.D.	0.161" (4.1mm)	Final O.D.	0.171" (4.34mm)
Color	Red tint	Color	Blue tint
UL Temp Rating	257°F (125°C)	UL Temp Rating	392°F (200°C)

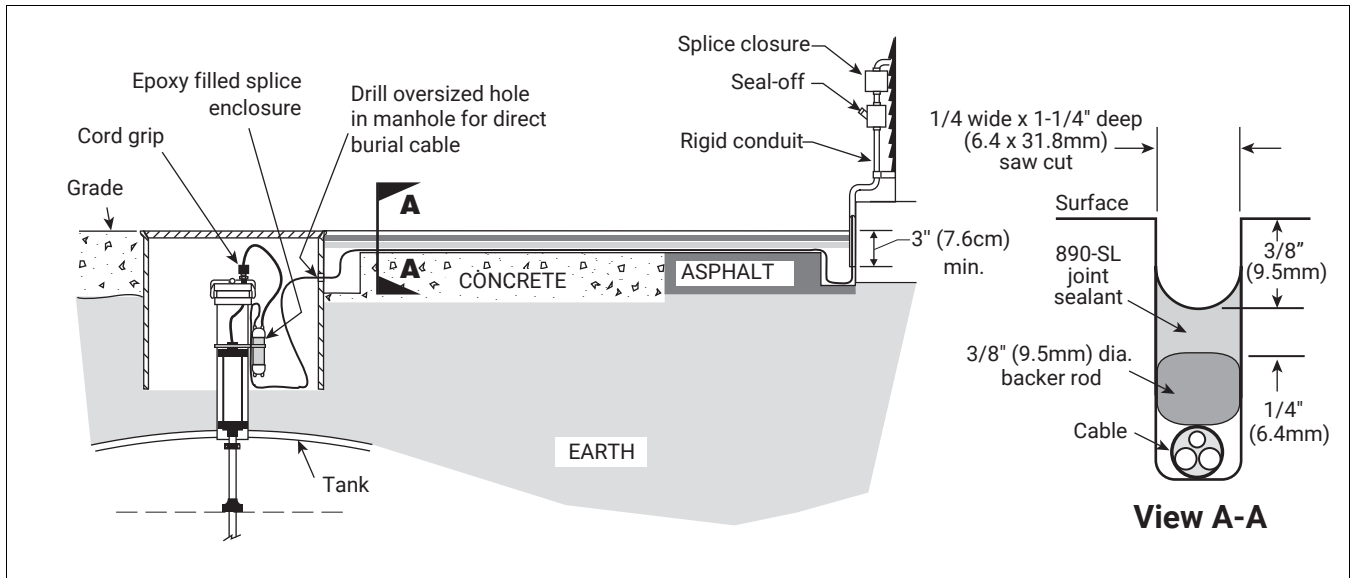
Direct Burial Cable Components

Order equal lengths of filler rod and either type cable. Refer to Veeder-Root manual 576013-858 to estimate length.

- Filler rod - P/N 848100-1XX, lengths of 100' to 2000' (30.5 to 610m), in increments of 100' (30.5m)
- Filler rod installation tool-P/N 848100-904, adjusts to 1/8" (0.32cm), 1/4" (6.4mm), 3/8" (9.5mm), or 1/2" (12.7mm) saw cuts
- 2-conductor cable - P/N 848100-2XX, lengths of 100' to 2000' (30.5 to 610m), in increments of 100'
- 3-conductor cable - P/N 848100-3XX, lengths of 100' to 2000', in increments of 100'
- 29oz. cartridge of 890-SL Sealant - P/N 848100-800, 60 linear feet (18m) in 1/4" (6.4mm) wide cut
- 4.5 gallon (17 liter) can of 890-SL Sealant - P/N 848100-805, 1200 linear feet (365m) in 1/4" (6.4mm) wide cut

- Sealant Cartridge Gun, Manual Driven - P/N 848100-901 (for use with P/N 848100-800 cartridge)
- Sealant Bulk Gun, Air Driven - P/N 848100-903 (for use with P/N 848100-805 4.5 gallon (17 liter) can)

Direct Burial Cable Installation Example





For technical support, sales or
other assistance, please visit:
www.veeder.com